EDITORIAL

DOMESTIC ENGINEERING

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"DOMESTIC ENGINEERING" WILL PUBLISH FARM NUMBER IN SEPTEMBER

"Domestic Engineering" takes pleasure in announcing that it will publish a Farm Number in September. The first issue in that month will analyze the tremendous possibilities that are before the plumbing and heating trade to sell modern equipment to farmers. It will contain authoritative statistics to prove that the farm field has not been scratched when it comes to selling apparatus of the character that is handled by our trade. It will show to what extent electric lighting equipment—the foundations for water supply and plumbing fixture sales—has been sold. Many other interesting and valuable features are planned for that issue. This, so far as we know, will be the first number ever devoted exclusively by any publication in this field to exploiting the opportunities for sales to farmers.

Those who have cultivated the farmer in developing business have made it a practice to exhibit at state or county fairs, which usually start late in August and run into October, and sometimes as late as November and December. Such effort has resulted in getting well acquainted with farmers in a wide territory and this has led to profitable sales. The program of fairs this year is a formidable one, and with the prosperity that farmers are enjoying, it is logical to prepare now for these timely events. They have the money to spend and know the value of buying good equipment. They can afford the best and no opportunity should be lost to display and talk quality fixtures and equipment.

"Domestic Engineering" extends a cordial invitation to all who have made a success in selling farmers to contribute their experiences for the benefit of others in the trade. We shall be glad to cooperate with all who plan farm business campaigns, by submitting suggestions for building business.

SALESMANSHIP AND RECONSTRUCTION.

SALESMANSHIP and its possibilities are legion. It has been said that all success is effected through the principles of salesmanship, and that the acquisition of profit narrows down to the proposition of being able to sell your service at a substantial figure.

During the period of readjustment and reconstruction of the disjointed forces of business and industry, the factor of salesmanship will play an essential role. As soon as business and industry begin to swing into the normal, competition will grow keener than hitherto. All the powers of salesmanship will be released.

Leading plumbing and heating contractors are realizing the importance of cultivating salesmanship. They have reconstructed their past methods of doing business, and are proceeding upon the principles of modern merchandising.

The plumbing and heating contractors who look into the future see that merchandising on their part is inevitable. Salesmanship developed and intensified will be the savior of the plumbing and heating men of tomorrow. The trade is gradually coming to see the necessity of reconstruction in its methods of doing business. The old ideals and traditions must surrender to the new field of merchandising.

Although the installation feature will survive, the dominant factor will be the selling side. The contractor will continue to be a contractor, but let him also be a merchant and a salesman.

A representative plumbing contractor recently told the story of a plumber who set out to sell water supply systems to a list of rural prospects, wealthy farmers, residing in his district. He said that the contractor wore overalls, and that he didn't look like a salesman in consequence, but he added: "His mind didn't wear overalls." And that was the big and vital factor in his success. He sold water supply systems in spite of the overalls he wore. He was a salesman. His selling ability predominated and overshadowed the fact that he wore overalls instead of a business suit.

The moral in the story is not that it is desirable or even wise to wear overalls when you are seeing prospects. The moral lies in the fact that it was his selling ideas that made him a salesman and not his clothes.

"It may be that he was too busy getting the selling arguments out of his system," said the representative plumbing contractor, "to find time to get out of his overalls into a regulation suit. Perhaps he was like some great men who did great things, but who dressed carelessly. They would have been just as great had they dressed otherwise. However, the ideas in their minds were what really counted in the final summing-up."

Salesmanship, the first principle of merchandising, must be developed as never before. Business men will appreciate its power. In the campaign to win the markets of the world for "Made in America" products the strength of salesmanship on this side of the globe will be matched against the combined selling power of the Old World.

America must make the most of its salesmanship during the period of readjustment. It must be highly energized—compelling. It must convince foreign markets that American goods will stand the test and are worth purchasing.

The PROBLEM *of* BACK VENTS *and* ANTI-SIPHON TRAPS

The Question of the Hour in Our Trade—The Use and Abuse of Anti-Siphon Traps and Back Vents in Plumbing

By Robert J. Gordon

FOR some time back there has been considerable agitation in the trade with reference to anti-siphon traps and back vents. Some writers and lecturers have demonstrated what they called simplified plumbing, but which in reality was an attempt to abolish certain portions of the drainage ventilation system. In their proposed systems they employ anti-siphon traps of different varieties as a substitute for the vent pipes so discarded.

Probably in many cases this does cheapen the plumbing, as it is frequently cheaper to install an anti-siphon trap than to run a separate back vent. The cheapening process, however, appears to have some dangerous elements attached to it. For instance, modern competition demands that plumbing contractors frequently have to estimate low in order to obtain some contract work. If the specifications are not exact in detail, if they do not specify that each trap must be separately back-vented, if the plumbing rules and regulations in force in the district do not particularly specify separate back-venting of traps, and if the architects' plans do not show separate back-venting, then the competing plumbing contractors are very liable to eliminate all the ventilation piping that is possible.

Whether such elimination will be unsanitary or not will depend a great deal upon the personal ingenuity and knowledge of the contractor, and the precision of his mechanics.

The doctrine of the elimination of back vents is not new. It did not spring up over night. More than twenty years ago it was conceived and exploited. Architects, real estate speculators, and some writers have advocated it, while a certain class of contractors have practiced it wherever possible, the idea being either to reduce the cost of plumbing, or to place on the market a certain type of trap termed anti-siphon traps.

However, it does not matter what was the underlying incentive for the campaign, we have to face it only from a scientific and public welfare viewpoint. That's the way the trade looks at such things. Any good idea which comes up and proves to be beneficial to the public purse, or public health, our trade is broad minded enough to accept it and push it along. But anything which comes along in plumbing circles and which is known to be a detriment to public welfare and public health, our trade should and does oppose it.

These are well established facts. The only uncertain element in the introduction of a new idea in the trade, or of radical changes in our plumbing codes is whether or not the new idea or change, will become a benefit to the public or a detriment. If it is a benefit it should and will be adopted If it is a detriment it should and will be discarded. If there are certain places where it will be beneficial and others where it will be a detriment then it will be used under restrictions, being kept within its sphere of usefulness by proper amendments to the codes. That, as we understand it, is the broad policy on which our modern and highly satisfactory plumbing codes were built. This policy has for its object: first, the preservation of public health as far as our trade is concerned, and second, the reputation and welfare of our trade. "But," you say, "if an inventor creates a new thing which he is certain will improve plumbing, and he influences manufacturers to make it and sell it to the trade, who should be the judge as to its merits and as to whether or not it should be used by the trade? Is it the inventor, the manufacturer, the supply house, or the trade?"

The writer has no hesitation in saying that the trade must be the judge. The trade is the only party in a position to know. It is the only party held responsible by the public for the operation of the innovation in service. Therefore, the trade must render the decision as to whether or not it should adopt or reject any specific device or system.

The reason the writer is analyzing the question this way is because certain manufacturers of anti-siphon traps are reported to have been very busy recently trying to change existing plumbing ordinances so as to abolish vent piping and use the money so saved to buy their anti-siphon traps. They have tried to get the codes changed to suit themselves, over the heads of the trade. They have been so determined to compel plumbers to buy their goods that they have fought hard against the trade thinking that if they could but get the codes amended, all the plumbers would have to buy their goods. They have even gone the length of trying to lower the standard of sanitation by advocating the elimination of venting.

Don't misunderstand me, reader. There are only a few anti-siphon trap manufacturers who have tried to force the trade to use their traps. There are others, however, who have treated the public and the trade right. They have not had a hand in campaigns to wipe out venting and so wreck plumbing systems. It seems a pity that they and their traps should suffer because of the unjustifiable aggression of others.

In New York City, not long ago an attempt was made to have the excellent code of that city amended so as to eliminate back venting by the use of anti-siphon traps, and the Master Plumbers' Association fought it. They fought it, we believe, not because they did not want anti-siphon traps to be used, but to protect the health of the public by retaining full and complete venting. They knew from practical experience that if such an amendement had gone through public health would have suffered.

They fought it, and fought it hard. But to do so they had to prove that anti-siphon traps, or any other kind of a trap, connected to the kind of ventless plumbing system

proposed, would be insanitary. They erected test systems exactly as called for in the amendment, attached anti-siphon traps to them, then tested them in a fair manner.

They found and demonstrated that anti-siphon traps can be siphoned by the lack of vent pipes. Also that their seals can be blown inwards toward the building by air compression. In either case the traps were rendered useless as barriers against sewer gas entering buildings. That satisfied the New York Association that anti-siphon traps are not safe substitutes for back vent piping, therefore they fought the amendment with redoubled force.

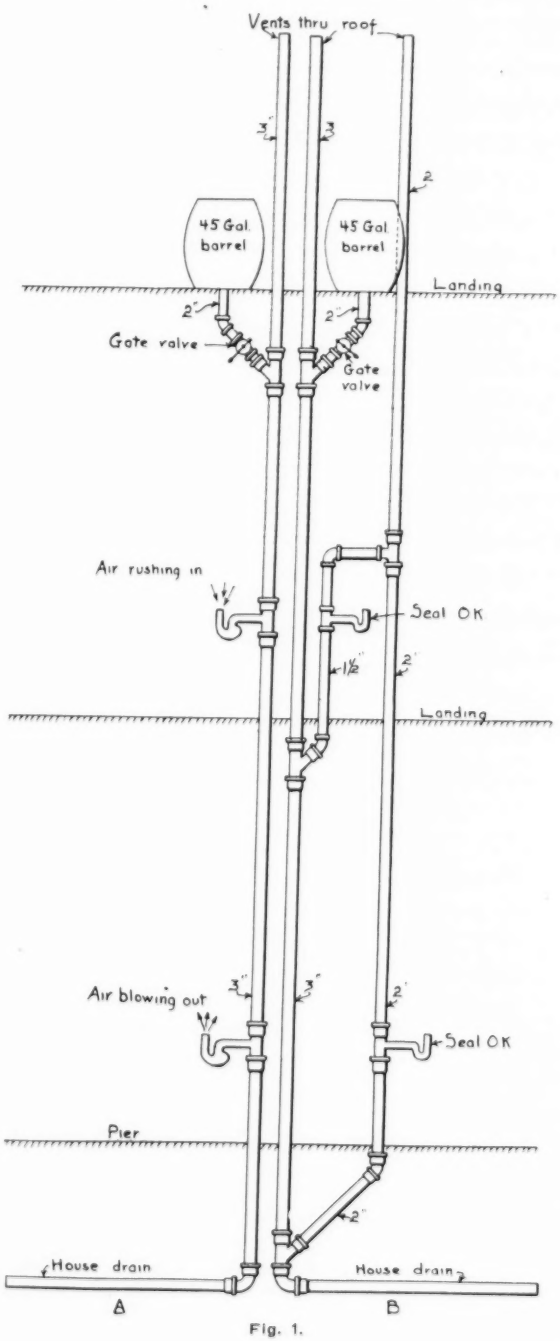

Fig. 1.

All that happened before the Annual Convention of the National Association of Master Plumbers met at Atlantic City last June, but at that convention the New York Association again took up the matter. They went to the expense of erecting an elaborate and very complete equipment of stacks, traps, etc., to show the delegates from all over the United States the fallacy of eliminating back vent piping.

One stack was arranged with anti-siphon traps and left ventless as required by the proposed New York Amendment. The other stack was vented and equipped with ordinary round pipe traps as per the usual New York practice, and the old code. The tests were made before crowds of delegates, every one receiving occular evidence that the anti-siphon traps could allow sewer gas to enter buildings when unvented, while the ordinary round pipe traps properly back vented would not allow sewer gas to enter buildings.

Such was the effect of these demonstrations on the delegates that a resolution was passed in the convention in opposition to anti-siphon traps and in favor of back-venting.

Fig. 1. Is a rough sketch showing in a general way how the apparatus was erected and the tests applied. Two 3-inch waste stacks were erected. One was for the anti-siphon traps and discharged into a short 3-inch house drain A. The other was for the round pipe traps and discharged into an equally short 3-inch house drain B. The stacks were both the same diameter, made of the same kind of pipes and fittings, discharged into the same kind of house drains, had the traps attached at the same levels, and were flushed from a barrel in exactly the same way—that is through a 2-inch pipe and quick closing gate valve.

The barrel contains 45 gallons of water and represents a bath tub, the 2-inch flush pipe representing the 2-inch waste from a good modern bath.

Alongside of the 3-inch stack for the round pipe traps was erected a 2-inch vent stack as per present practice in New York City. The apparatus connected to A represents the arrangement permitted by the proposed amendment. That at B represents the class of work required by the code as it stands.

Now for the tests. All traps were sealed as they would be in practice. Then the gate valves were opened and water allowed to flow from barrels into the stacks as it would flow from a good modern bath tub into the stacks. When a few gallons entered the stack at A there was a suction at the upper anti-siphon trap which drew in air. The trap gurgled as all anti-siphon traps do when letting in air. A glass window in side of trap showed the gurgling action inside this trap. About the same time there occurred at bottom of stack an air compression which forced water out of the lower trap spattering it over the floor. There was also a large blow of air out of this trap. The air continued to be sucked in through the upper trap and blown out through the lower trap while water was allowed to run into the stack from the barrel. After 15 gallons or so had been discharged from the barrel, the gate was shut. Then the two anti-siphon traps came to rest. But it was found that the upper trap was entirely unsealed. This could be seen through the glass window.

That test proved that neither of these traps could be considered sanitary while fitted up this way. It satisfied the delegates that the use of anti-siphon traps without back-venting is a dangerous procedure and one not to be countenanced by the trade.

The test at B showed the great value of back venting When water was run into this stack, the same quantity and in the same manner, the trap seals both remained steady. No air entered through either trap, and none was forced out of either trap. At the end of the test the seals were as

perfect as before the test. That was positive proof which could not, and never can be refuted.

Probably every delegate witnessed the tests and was satisfied that they were fair and square and practical.

The New York Association deserves great credit for bringing this matter so forcibly before the trade, as the trade was becoming rather upset by the persistent attacks on back-venting. The resolution adopted by the National Association should settle the much discussed question of the unjustly abused back vent. That resolution will steady the trade. It will help associations in other towns to stand pat for back venting as a necessary and vital element in sanitary plumbing systems.

plumbing would quickly become so insanitary, foul, and nauseating to the public that they would pass laws to wipe such traps out of existence, and restore the old time back vents.

The best thing for the public, the trade, and for anti-siphon trap manufacturers, too, is for architects and plumbers to be free to specify and use any kind of a sanitary trap, but to be compelled by law to back vent it properly and thus safeguard the seal against siphonage and back pressure. Then anti-siphon traps will operate properly and give general satisfaction. At least, that is the opinion of the writer.

Now refer to Fig. 2 again. Isn't this a millenium dream? Visions of universal plumbing on this order have kept some

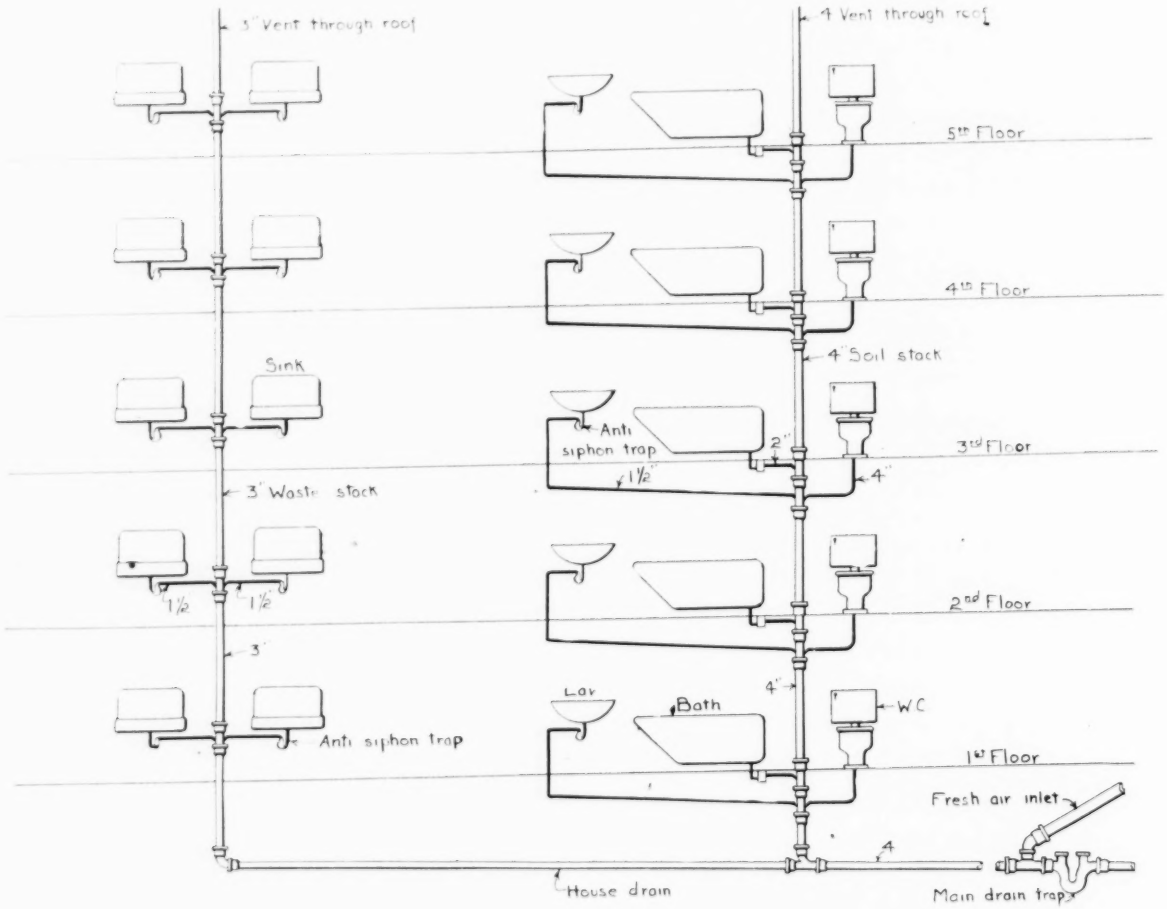

Fig. 2.

Some have carried the "simplified plumbing" bug so far as to recommend systems very much like that shown in Fig. 2. Possibly they never wiped a joint, nor calked a hub in their lives, and perhaps that accounts for their lack of knowledge in plumbing. Anyhow they have exploited such systems from the lecture platform and through the press. But its only "Bolshevism" against sanitation—that's all. It is fundamentally and radically wrong.

Reputable anti-siphon trap manufacturers don't want to be led into anything that will be a menace to public health There are plenty of uses for anti-siphon traps in modern plumbing without having to depend upon the abolition of back vents for their sale. In fact, it would appear that the quickest way to entirely kill the sale and use of anti-siphon traps is to amend codes so as to eliminate back venting. Then folks awake at night concocting schemes for acquiring wealth and fame.

The American public demands safe, sane, sound sanitation, and, according to the "handwriting on the wall" they will continue to get it. There is only one kind of sanitation for America, and it is the BEST.

So long as the National Association of Master Plumbers of the United States continues to stand up for sound sanitation, as they have done in the past, there is little chance of degeneracy in our trade.

A Red Cross man in the recreation room of one of the Debarkation Hospitals offered to send a telegram home for a returning wounded soldier. This is what the boy dictated: "DEBARKED, DELOUSED, DELIGHTED, JIM."

NOTES *on the* HEATING *of* PUBLIC *and* PRIVATE GARAGES

Radiation Required and Suggested Methods of Installation — Steam Heat Preferable for Public Buildings and Hot Water for Smaller Structures

By Frederick Grant

WHEN the usual methods of construction are followed in erecting the building the installation of a heating apparatus for a garage presents conditions that, in many respects, are quite unlike those found when planning the heating apparatus for any other class of building. It is seldom that any two garages are alike in size, lighting and door arrangements, etc., and therefore they cannot be treated in a similar manner as regards the location of the coils or radiators and the method of installing the piping system.

The usual temperature required in the garage is from 55 to 60 degrees in that portion of the building used for car storage, 65 degrees in the repair and stock departments, and 70 degrees in the office, toilets, etc. While the building is constructed in much the same manner as a factory housing heavy machinery, the radiation requirements cannot be estimated in a similar manner, as the lighting plan, or amount of glass surface in the garage, differs materially from the factory or any other building of equal size. The amount of glass surface is not more than 50 per cent of that required for a factory of equal size. Also, differing from a factory, the doors of a garage are exceptionally large and, as they are frequently opened, large draughts of cold air are admitted which quickly lowers the inside temperature.

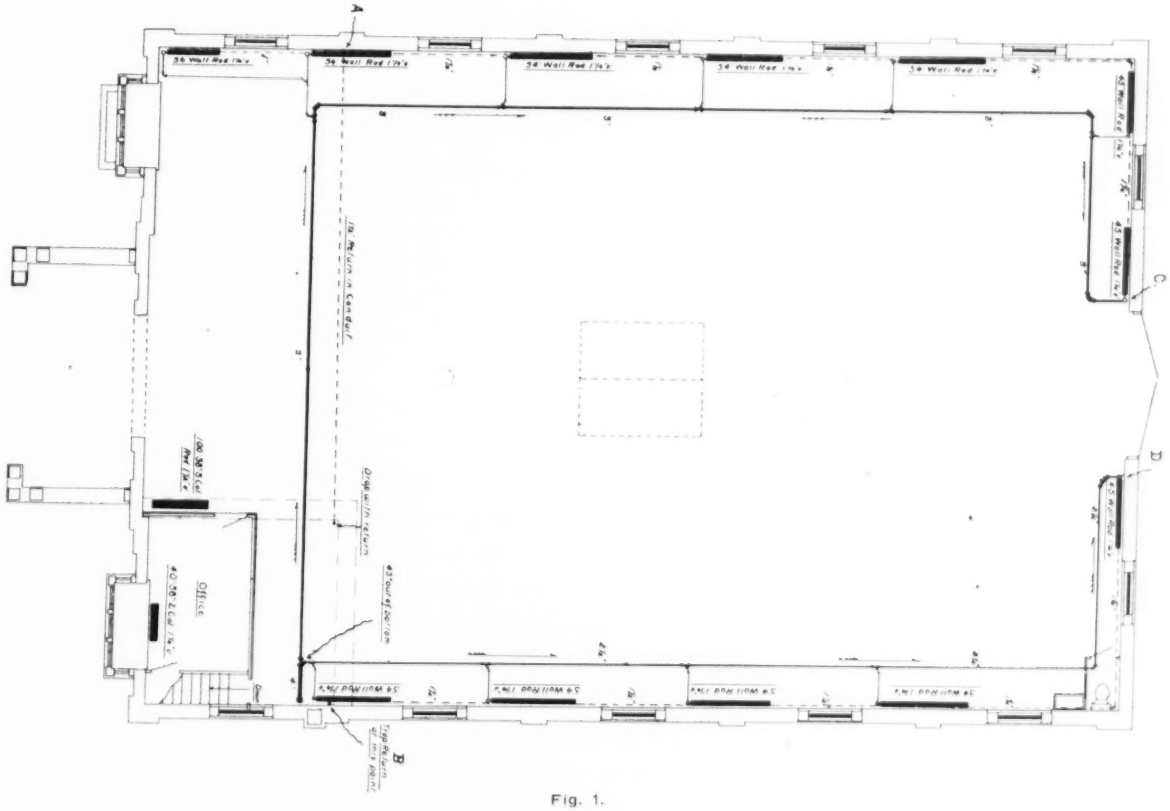

Fig. 1.

The location of the heating surface is a matter requiring the most careful attention. In that part of the building used for car storage the coils or radiators must be located in such a manner that they will not interfere with the movement of

the cars in and out of the building. Tires, and consequently the diameter of the wheels, measure 30 inches for the smaller cars and 36 inches for the larger cars, therefore there is a wall space from 12 to 20 inches above the floor which should be kept clear in order that the possible bumping of wheels against the wall will not strike any part of the heating apparatus. The fenders and other parts of the car must also be considered in this respect. It is therefore a good plan to locate the radiators so that the bottom of them is at least 4 ft. above the floor. An exception to this may be made if the walls are recessed or if the foundations are wider than the walls of the garage and extend above the floor and

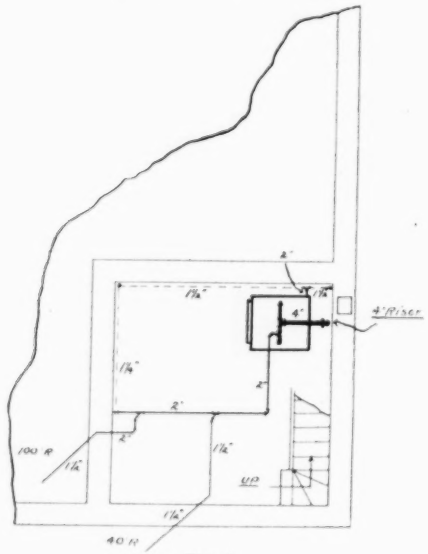

Fig. 2.

form a ledge which prevents the cars from touching the walls.

There is no basement excavated under the usual building used for garage purposes. This is a condition which the heating contractor must face in planning for the installation of the piping. Under some portion of the building there is probably a small boiler and coal cellar in which the boiler is to stand, and the plan of piping must therefore conform to this condition. For this reason the overhead system of piping is particularly adapted for the work. By using this system an important advantage is obtained. Practically all of the piping is exposed in the garage and is used as radiating surface. This is an item of economy and adds to the efficiency of the apparatus, particularly in a one-story structure where the roof exposure is a factor. Some garages of two or three stories use the upper floors for dry storage, that is for the storage of cars from which the water and oil has been removed, therefore no heat is required in this portion of the building. Other garages have their repair department on the second or an upper floor and therefore require heat. In a case of this kind the steam mains can run overhead on the first floor and the radiators on this floor can be supplied by drop risers, while the radiators on the upper floors are supplied by risers feeding upward from the mains. These connections may be made one-pipe or two-pipe as desired or as circumstances may require.

As a rule the garage has two entrances, or an entrance and exit, at opposite ends of the building. If the building occupies a corner lot the entrances may be at one side and one end. This condition prohibits the crossing of such spaces with the return piping except in a manner that will not interfere with the use of the doors. As perfect drainage of the water of condensation is essential the heating contractor must plan the piping in a manner to overcome this condition. The main return pipes running along the side walls being above the water line the returns from radiators and drips from risers cannot be connected into them without some provision being made to prevent the short circuiting of steam. Two methods are available for this purpose. A false water line can be created, or all drips and returns can be provided with check valves.

To illustrate some of the conditions we have cited we will consider the heating of a medium-sized garage, an actual installation, the heating apparatus for the building having been in use the past two winters and found to be thoroughly efficient and satisfactory. Figure 1 shows a floor plan of the building which is 54 by 80 feet in size and has an average ceiling height of 16 feet. The roof slopes to each side from the center at a pitch of about twenty degrees and a small monitor is constructed in it about fifteen feet long. This monitor is very near the center of the building and has a skylight 5 by 10 feet on each side. There is no ceiling to the garage, the interior being open to the roof.

The building illustrated is used only for public car storage and convenience, and no repair or shop space is provided excepting benches under the rear windows. A small office and stock room is located in the corner above the boiler cellar. A temperature of 70 degrees for this office and 65 degrees for the garage is required.

There is approximately 69,120 cubic feet of space to be warmed and 3,000 square feet of wall exposure and 742 square feet of glass to be considered in estimating the radiation required. The latter includes the area of the large doors which are partially glass. To maintain a 70 degrees temperature within the building with a zero temperature outside there would be required 866 square feet of radiation as usually figured. To provide for an inside temperature of 65 degrees, under similar conditions, this amount of radiation can be reduced by about 15 per cent. The radiation required to offset the roof exposure is about 175 square feet. As there is appproximately 175 square feet of heating sur-

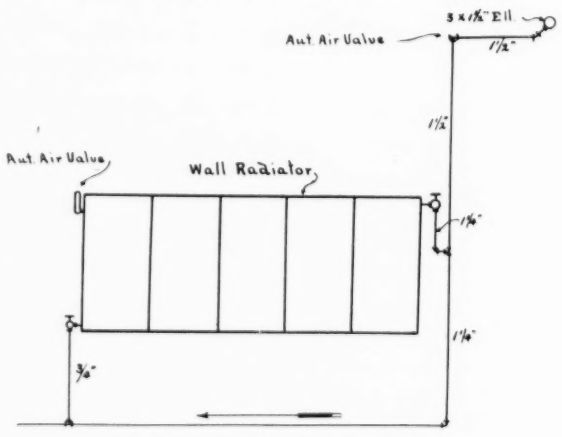

Fig. 3.

face in the piping we may consider that this will care for the roof exposure.

For garage heating the wall type of radiation is particularly adapted. It can be assembled in panels to suit spaces of particular size and will distribute the heat to better advantage than the standard type of radiator. Note by Figure 1 that twelve panels of wall radiation are provided for this installation; eight of six 9-foot sections, three of

five 9-foot sections, and one of four 9-foot sections. In addition a large 3 col. 38-inch standard radiator is located next to the office partition near the front of the building. This radiation totals 743 square feet, which is very close to the amount obtained by reducing 866 square feet by 15 per cent.

In years past many garages were heated with pipe coils. Wall radiation can be used to much better advantage than pipe coils particularly if the item of cost is a factor to be considered. At the period when the cost labor was so much lower than at present, and the price of pipe and fittings was correspondingly low, pipe coils cost less to build than the price of an equal amount of wall radiation. With the increased cost of labor and higher price of material there should be a considerable difference in favor of wall radiation.

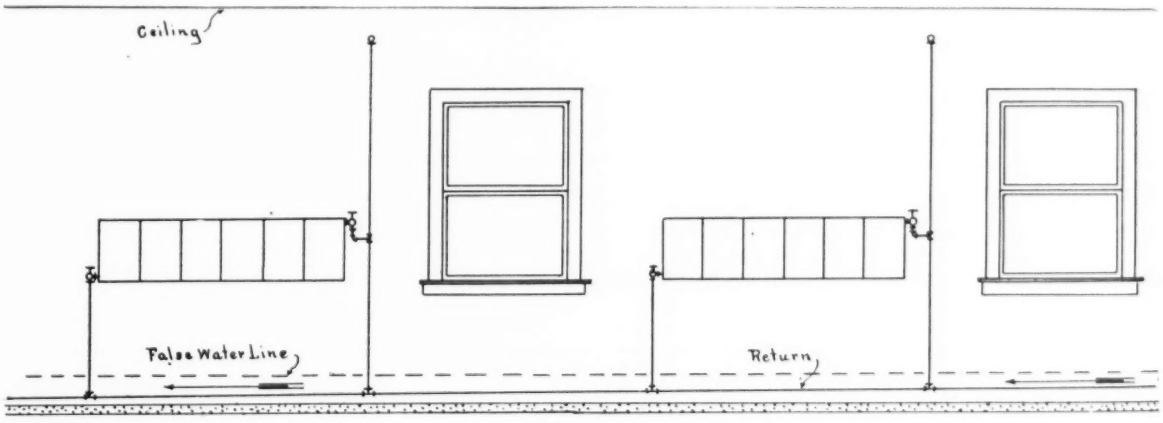

Fig. 4.

The basement excavated under a front corner of the building for the use of the heating apparatus and for coal is 15 feet square. This basement, in which is shown the location of the boiler, is shown by Figure 2. Two outlets of the boiler are joined to form a steam header and from this header a 2-inch main is taken to supply the office radiator and the large 100 square foot standard radiator at the front of the building. For serving the wall radiators in the garage a 4-inch connection is taken from the steam header which rises, at the point shown, to near the ceiling of the garage where it is divided into one 3-inch and one 2½-inch main. These mains are run in the manner indicated and the branches supplying the drop risers are connected 45 degrees out of the bottom. They extend the same size to a point near the end wall where, at points indicated by letters C and D on Figure 1, a drop is made with 1½-inch pipe which acts as a supply to the last radiator connected and also as a drip for the condensation in the main. This drip connects into a return pipe which extends along the wall at a height of from 8 to 10 inches above the floor. The detail sketch, Figure 3, shows the method of making these connections at the end of the mains.

The method of making the connections to the panels of wall radiation is shown by Figure 4. The sketch shows the drop risers from the elbows at the ends of the branches. The radiators are shown with the supply connected into the top of the radiator as for a vapor or modulated system. If it is desired these connections may be made into the bottom of the radiator. At points indicated by letters A and B on Figure 1, the returns are trapped in order to flood them and create a false water line. The trap and pipe connections at this point are illustrated by Figure 5. Note that a tee which is plugged provides a means of draining the return when this is desired. The return from the side of the building opposite to the boiler is taken across the floor of the garage to the boiler cellar through a conduit made of 6-inch vitrified drain pipe. This conduit is buried in the concrete below the floor and the joints of the pipe are cemented. It opens into the boiler cellar at a point about 18 inches below the floor of the garage.

When installing a system of this character it is well to be generous in sizing the mains and other piping in order to keep the pressure drop at the end of the line as small as possible. By so doing, and by properly venting the system, it is possible to fill every radiator with steam or vapor at a very slight pressure above that of the atmosphere. This will add somewhat to the cost of the installation but as all supply piping is counted as radiating surface the increased cost is more than overbalanced by the efficiency of the apparatus as regards the saving in fuel.

For a public garage steam heat is better than hot water. The air in a large exposed building is more quickly circulated and heated by steam. It is true that a steam heating apparatus requires more attention than a hot water system, but in a public garage there is always a man around who can attend the boiler and look after the apparatus when required—a circumstance not true of a small private garage. The heating apparatus in the latter building may not have attention for hours, or perhaps between morning and night, and therefore for such a building a hot water heating apparatus is better than steam.

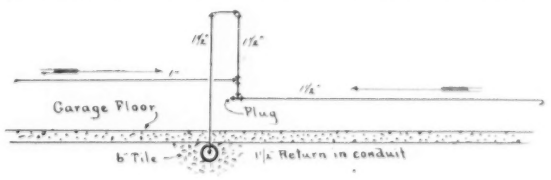

Fig. 5.

A garage situated some little distance from the residence cannot well be heated from the house heating boiler. This is a problem frequently appearing in the Questions and Answers Department in "Domestic Engineering." The steam fitter would not be so interested in attempting to heat the garage in this manner if it were not the desire of the owner and therefore he should be informed that it is neither economical or desirable to connect the radiation in the garage with the house heating boiler. Nine out of every ten attempts to do this have resulted in failures. The decreased

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WHAT YOU SHOULD KNOW ABOUT OVERHEAD EXPENSE

An Excellent Essay Read Recently Before the Atlanta Association of Master Plumbers Covers this Subject in an Interesting Way

By Dan Carey,

Secretary of the Atlanta Builders' Exchange and Secretary of the National Builders' Exchanges of the United States

IMAGINE the Master Plumber seated in a chair blindfolded, playing the game of Fine and Superfine, which always amused us as children. The pretty little girl behind his chair is Miss Business Profit. When she says: "Heavy, heavy hangs over your head," if he answers "Overhead" he kisses Miss Business Profit, but if he does not guess right his sentence is the bankruptcy court.

Remember as you listen to this paper that it has not been written by an expert on the subject of overhead. In my somewhat limited experience I have from time to time made mental notes on this subject, and I am giving you today merely the more important of these notes and the results of observations obtained by listening to the experience of others. I shall not sermonize or theorize, but shall try to get right down to the meat of the subject. My only hope is that I shall give you something to think about.

I have asked a great many men what they consider overhead to be. Most of them have answered that it is the cost of doing business. I think it is much more far-reaching than that. I think Overhead consists of these three things:

First: The cost of trying to get business.

Second: The cost of doing business.

Third: The cost of business you regret you are doing.

I shall not give the amounts, or what I would presume to be the amounts, because that would vary with each business, and each one of you will have to name the amounts for yourself.

Having bought a business license from the city, which permits him to start his overhead account, the Master Plumber purchases a set of books, rents an office, puts a carpet on the floor, buys his desks, chairs, drawing board and hatrack, purchases a box of cigars, which he keeps in his desk for visitors, buys a typewriter and an adding machine, hires a bookkeeper and a stenographer, buys paper, pens, ink, pencils and stationery, puts an advertisement in all the papers, sends out a lot of announcements to architects and contractors and owners, at the cost of numerous stamps, begins telephoning both local and long distance, buys some technical books for his office library, subscribes to the various magazines, joins the clubs, joins the Builders' Exchange, joins the Chamber of Commerce, joins the Master Plumbers' Association, etc. It is all overhead, with the exception of his permanent investments, and on them he has the interest on his money and the depreciation charge.

I want to deal with that question of bookkeeper and stenographer just a little, because some men appear to believe that they do not have this overhead, because they do not pay out money for such service. Remember this vital point: Overhead exists, even though you do not pay out money for it. I know a man (he is not a Master Plumber, by the way), who has his wife keep his books, his daughter does his stenographic work, his son is his office boy and collector. He thinks he is paying them by allowing them to bear his name, I presume, because he does not pay them salaries. Recently I had a talk with him about the miserably cheap bids he is submitting, and he gave me, with evidence of glee the facts I have given you as to why his overhead is less than that of his competitors. I contend that even if a man is his own bookkeeper, writes his own letters and collects his own bills he is entitled to pay himself whatever amount he will have to pay to have these services performed when he breaks down from overwork, gets sick, or dies.

The same thing applies to his own drawing account. I know a plumber who allows himself $15.00 per week as a drawing account, and he admits he could not hire a manager for his business for less than $75.00 a week. This plumber is not allowing a fair charge for this feature of his overhead. I have heard a great deal of discussion about a proper drawing account in a business. Some men contend a man is entitled to draw what he thinks he is worth to his business. That's dangerous. Others say the proprietor should draw what someone else would pay him. That's problematical. The real test is the cost of employing someone to conduct the business for him. That figure can be ascertained almost exactly.

Now should a man pay himself a salary for operating his own business? He need not take the actual money if he does not want to, and can leave it in his bank account, but unless he figures the amount in his overhead he is doing his business an injustice. If he is conducting a real business he is so operating it that it will continue uninterrupted when he is taken ill, or gets into an automobile accident or falls off a scaffold or dies. And unless he has a business which will continue as a business for his wife and family after he is dead or while he is disabled, he is operating a day labor establishment, and not a place of business.

Let's go on with itemizing some features of overhead. I have mentioned the business license. There are also the taxes, municipal, state, county and national, and you all know the item is considerable. You have items of insurance which cannot be charged to the job. There are pictures of the work you do, and I think that some of you would find this a very profitable feature of overhead

in securing business from future customers. Don't forget legal expenses, which include the advice from your attorney, the special contracts he has to draw for you, and the charges, he makes for settling suits against you and your suits against others. Then comes the rental you pay on equipment which you do not feel like buying. Remember your small tools account. Figure out the interest on your entire investment and add that into your overhead, because if you did not have your money invested in equipment, you would have it drawing money in a savings bank, and anyway the bank charged you interest on the money when you borrowed it. Then there is your lost time. That is quite an amount, if you look into it properly. Your men finish on a job at one end of town. You transfer them to an entirely different section. Three hours are lost. That's overhead. Or you find it necessary to keep your men on the payroll a couple of days because you want to hold your force for a new job. That's overhead. Or it is necessary to send some men out to stop some leaks that developed after you finished the job and received your pay. That's overhead. I know a master plumber who repaired some bad leaks inside of a brick wall on account of poor foundation work, and he repaired them, even though he had not done the foundation work, because he was getting the credit for the plumbing and the discredit for the leak. That was overhead.

Don't forget our beloved citizen who finds that your work was not what he expected it would be or who finds flaws in your work and who insists that from $50.00 to $150.00 be knocked off the cost of the plumbing. Every time he swindles you out of a dollar he has added a dollar to your overhead.

Please remember your trucks and your automobiles and include the cost of them in your business. I mean even your private automobile, which you use all week in your business and for joy riding on Sunday. Recently I had a talk with a roofer, who told me he was doing business at a cost of eight per cent. When I laughed at him he agreed to discuss the matter. Of course I at once ascertained that his overhead was much more than he estimated, but among other things I found that the automobile which he uses to secure business was purchased personally by one of the stockholders in the business, and that the stockholder paid the entire cost of operating and repairing the auto. It was rather a curious arrangement, I thought, but I accepted the statement, of course. I told, him if he was using an automobile in his business the cost was there, no matter who paid it. He admitted that, but said it was a contribution, and, therefore, he did not carry it in overhead. Finally I put it to him this way, and he saw the point. I said, "Now listen to me a minute. This man is contributing an automobile to your business, but you are not including it in overhead, is that correct?" He said it was. "Then" I said, "if you are not including it in overhead you are deducting it from the price of your roofs, isn't that true?" He admitted it was. "Then," I concluded, "can't you see that isn't contributing an automobile to your business at all, but is simply, as a result of your business methods, contributing to the cost of laying roofs to owners, something which he doesn't intend to do at all and a thing which the owners not only do not know about, but would not appreciate if they did."

Now I have no doubt that I have left out many, many items of overhead that you gentlemen know about, but which do not occur to me at this time. If you do know of them I appeal to you to include them in your charge for doing business. The Federal Trade Commission about two years ago issued a pamphlet on this subject, in which the statement was made that failure to understand what overhead consisted of and failure to include it in charges to customers, was the chief cause of the business death rate in the United States. Why fool yourself? Install plumbing at a profit of one-quarter of one per cent if you want to, but don't try to convince yourself when you do that you are making ten per cent. A man ought to be honest with God and his fellow men for the sake of his soul; a man ought to be honest with his wife, because it is right to be honest with her; a man ought to be honest with himself because he is a man, and because he cannot be a man unless he is honest with himself. Therefore, be honest with yourself. Don't cheat yourself out of your overhead. Play the game square with yourself at least.

Now this is as far as I was supposed to go with this paper, but I am going two steps further. I am going to take it for granted that you do not know how to figure the overhead into your business, and I am going to take it for granted that you do not know what the selling price of a job ought to be. I know, as matter of fact, that you do know how to figure overhead into your business, and I know also that there is some discussion about what the selling price of a job ought to be. In order to discuss the last point it is necessary to lead through the first. If you do a business of $100,000 a year and after keeping books for twelve months on what I have enumerated above, you find that your overhead is $10,000, then it is perfectly evident that you are doing business at a cost of ten per cent. In other words, by dividing the gross amount of your business into the gross amount of your overhead charges for any given period, you ascertain the per cent you are paying to operate your business.

We now arrive at the final stage: What is the proper selling price of a job? The selling price, by which I mean your estimate, what you will take the plumbing contract for is made of your raw cost, plus your overhead, plus your profit. If a plumber says he has done $100,000 worth of business and has made ten per cent on it, the natural inference is that he has made $10,000, and is ready to put it in the bank or invest it. When you tell your customers that you make ten per cent on their jobs they believe you, but I don't, and neither does your banker. We know better. You are simply getting the reputation of earning ten per cent without getting the money.

You all know and admit that there are three feet in a yard and twelve inches in a foot. You can adopt some private system of measurement if you want to, something that will be known only to yourself, but whenever you sell a man a fifty-foot lot he is going to expect you to deliver twelve inches in every foot of it. That is standard. It is fixed. So also it is with every other measure in the world. Now the same parties who declared that there should be twelve inches in a foot also announced that in every completed thing in the world there should be 100 per cent of something. It makes no difference whether it is a common brick, a picture, a continent, an arithmetical figure, or a plumbing job, or a building, it consists of 100 per cent of something. And by the same token, the price you receive for installing the plumbing consists of 100 per cent. The price the owner pays should consist of raw cost, overhead and profit. If you leave out your profit the 100 per cent consists of raw cost and overhead, and you are building without a profit. If you leave off both your profit and your overhead or if you do not put in enough to take care of your overhead you are erecting the building at a loss.

(Continued on Page 239.)

OIL SEPARATORS *and* THEIR CONNECTION *with* HEATING SYSTEMS

Removal of Oil From Steam Can Be Done in Three Ways—Mechanical Separation, Filtration or Washing—The First Being The Most Important

By Charles L. Hubbard

THE piping contract for an exhaust steam heating system often starts at the exhaust outlet of the engines, or at least with the main connecting the different units, and, therefore, includes the oil separator. As this is an important accessory and has to do especially with the heating system rather than the power plant, it is well for the fitter to have a clear understanding of its necessity, principle of operation, and the important points to be observed in its installation.

All steam engines require cylinder lubrication and the oil introduced in the high-pressure steam appears later in the exhaust, partly as a vapor, partly in small globules,

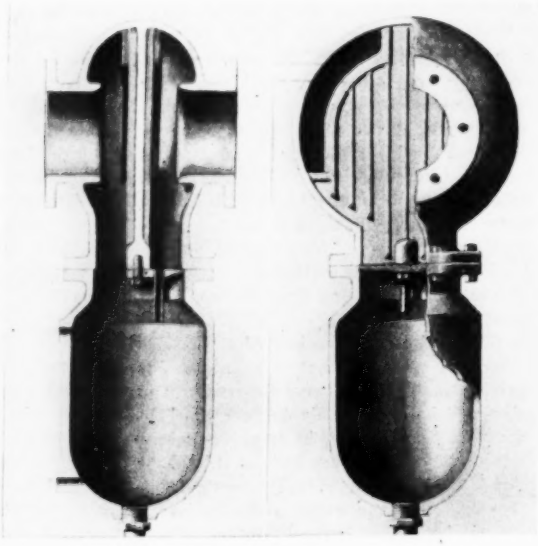


Fig. 1.

and the remainder emulsified with the water resulting from cylinder condensation.

If the exhaust is turned into the heating system without purification the contained oil forms a coating upon the interior surfaces of the radiators and coils, which reduces their radiating efficiency an appreciable amount. More important than this is the effect of oil in the boilers if the condensation is returned without its removal. The damage actually produced will depend somewhat upon the nature of the oil used and may vary from simple foaming or priming to rupture of the plates or tubes. Although the amount fed into the engine cylinders is small it accumulates quite rapidly in the boilers, as the only part eliminated from the returning condensation is the small amount contained as vapor in any surplus exhaust steam which may be thrown outboard. Oils containing animal fats are more injurious than purely mineral oils, although the latter are objectionable after a sufficient amount has accumulated in the boilers. The effect may be to produce priming; to unite with certain mineral substances in the feed water and bind them together in a hard scale, and most serious of all, to cause bagging or rupture of the boiler plates. Oil collecting in any low part of the boiler greatly interferes with the transmission of heat from the plate to the water, thus causing the former to become overheated to such an extent that in extreme cases it may become softened and sag.

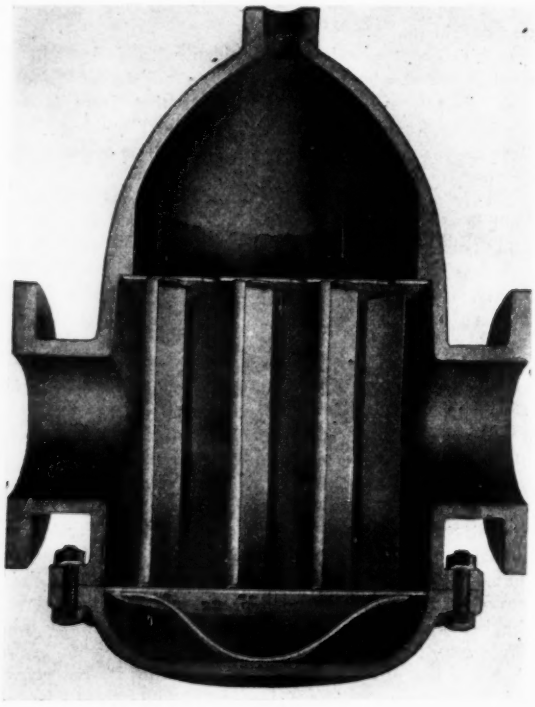


Fig. 2.

Oil may be removed either from the exhaust steam before it enters the heating system or from the condensation before it is returned to the boilers. The first of these is preferable, because it keeps the oil out of the radiators, as well as the boilers, and, furthermore, the devices employed in this case are smaller in size and more easily cared for. Sometimes, when it is difficult or impossible to purify the steam sufficiently under existing conditions the process is supplemented by purifying the condensation also of any oil which may find its way past the steam separator. Combinations of this kind are frequently found in large plants where every possible means is taken to improve the efficiency, or where, for some reason, steam purification proves defective. The present article will deal only with the removal of oil from the steam, which is far more common in heating practice, leaving the treatment of condensation for possible future consideration.

The three methods employed for the removal of oil

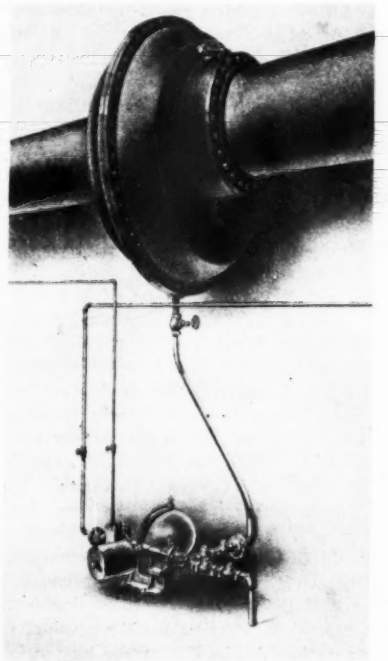


Fig. 3.

from steam are mechanical separation, filtration, and washing, of which the first is by far the most important.

Separators are a commercial product, and may be had in a great variety of forms, although practically all make use of one or more of four elementary principles of operation, as follows: Impingment of baffle plates, centrifugal action, change of direction of flow, and decrease of velocity. A typical separator employing the first principle is shown in two sectional views in Fig. 1.

Steam, entering strikes the corrugated baffle plate directly in front of the inlet. The particles of oil, together with the contained water of condensation are caught upon this plate and drawn downward to the receiving chamber at the bottom through an opening provided for this purpose, while the steam passes through the ports at either side of the baffle and is discharged at the other side of the separator. The drip pipe at the bottom carries away the oil and water as fast as it accumulates, either by means of a trap or partially opened valve in the pipe, which allows a continuous discharge.

Another form of separator employing a series of baffles instead of a single plate is shown in Fig. 2. The baffles are set alternately, so as to break up the currents of steam and the edges are bent in the form of shallow grooves or gutters to catch and drain away the oil to the chamber at the bottom. Any small accumulation which may collect here is prevented from being picked up by means

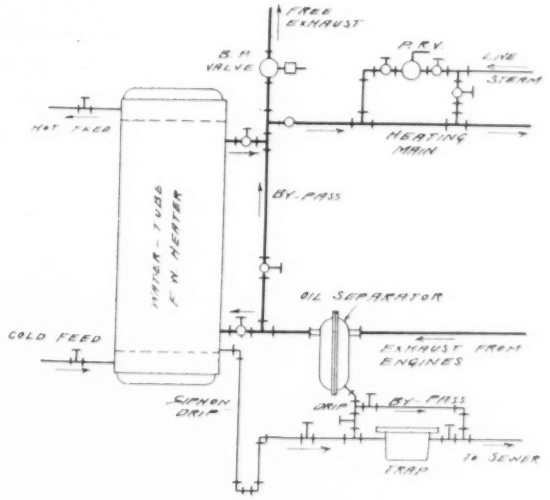


Fig. 4.

of a perforated diaphragm, to which the lower ends of the baffles are attached.

A type of vertical separator has baffles of somewhat different form. The flow of steam is downward in this case, and the oil and water caught by the baffles drain into the annular space next to the outer shell, and from here to the bottom, from which it is dripped to a trap or the sewer.

Separators employing the centrifugal principle are made in a variety of forms. By giving the steam a revolving

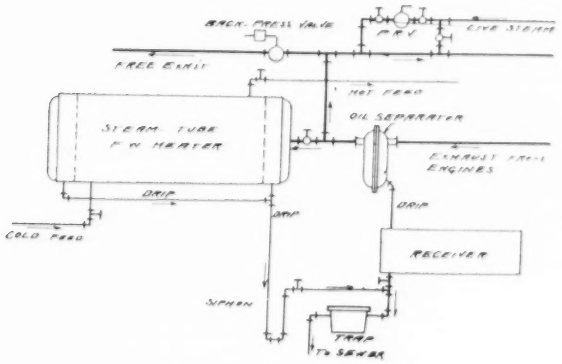


Fig. 5.

motion the water and oil, because of their higher specific gravity, are thrown outward from the steam, as indicated by the arrows and finally collected in the chamber or well at the bottom.

Separators built on the change of direction principle make use of the higher specific gravity of the oil and water, and the greater inertia which results from this. The sudden alterations or reversals of direction of flow

of the steam within the separator produce a whipping action, which throws the heavier particles out of the steam, while the latter passes on to the outlet. Reduction in velocity is produced by expanding the steam in a chamber of suitable size. This action, when sufficiently pronounced, allows the heavier particles of oil to fall to the bottom of the receiver by the force of gravity. This is hardly ever relied upon alone, but is combined with some of the other processes described.

The drainage of the entrained oil and water from a separator is a detail of much importance in the proper

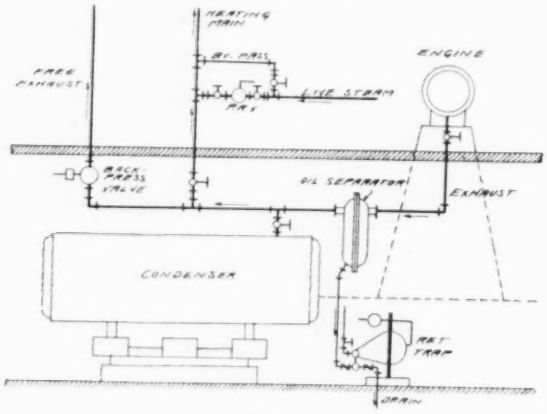


Fig. 6.

action of this device, for if allowed to accumulate there is a possibility of its being again picked up by the steam and carried into the heating system, although special precautions are taken in design and construction to prevent this. In most cases it is best to drain the separator through a trap, as this takes care automatically of all fluctuations, both of steam pressure and amount of oily water to be discharged. When conditions are practically uniform satisfactory results may often be obtained by the use of a throttle valve in the drain pipe, set to care for the amount of oil and water to be discharged.

When first starting up an engine there is an excessive amount of cylinder condensation, and provision should be made for handling this temporarily, either by use of a trap of extra large capacity or by means of a by-pass of ample size, which is allowed to flow freely to the sewer or dry-well until normal conditions have been reached. Sometimes a receiver is used between the separator and trap for taking up any sudden increase of condensation until the trap can handle it. Some form of emergency trap which brings extra valves into play when the trap is flooded is well adapted to this work. When the separator drain is easily accessible to the engine the by-pass arrangement may be used when first starting up. But if not conveniently located some automatic means like a receiver or emergency trap should be employed. In any case a form of trap should be used which has a free discharge and is not easily gummed or clogged with oil.

When the exhaust steam is used in a heating system at any pressure above that of the atmosphere, an ordinary steam trap may be used for draining the separator, but if it is discharged into a condenser, as is sometimes done during the non-heating season, the pressure in the separator will be considerably below atmospheric pressure and an ordinary steam trap will not discharge under these conditions. In cases of this kind a return trap must be used, as shown in Fig. 3, with a high-pressure connection for emptying the trap.

While mechanical oil separators are very effective when first installed they are quite apt to lose their efficiency with use unless provided with some means for keeping them clean. After the interior surfaces become coated with oil the steam is likely to pick some of this up and carry it over into the heating system, and from here it will find its way back into the boilers in the condensation. One of the simplest ways of overcoming this difficulty is to make a live steam connection with a series of jets or nozzles located either inside or outside, so arranged as to strike all interior surfaces which are likely to become foul. By blowing out frequently in this manner accumulations may be avoided to a considerable extent and a high efficiency be maintained under the conditions of continuous operation. Some makes of separators are so constructed that the interior is easily accessible for cleaning with a soda solution.

The best method of connecting the separator into the piping system will depend somewhat upon local conditions, but the following diagrams show the general principles to be followed, which may be easily adapted to the average case found in actual practice. It is well to state at this point that the size of separator should always be determined by the manufacturers and not made to correspond with the exhaust pipe from the engines. While this might be all right in certain cases it does not always follow, and the amount of steam to be passed through it per minute, together with the general location in the piping, should be submitted to the manufacturers before the work is finally laid out.

Typical piping arrangements for a "through" connection with a feed-water heater are shown in Fig. 4. In this case the exhaust, or a portion of it, is made to pass through the feed-water heater. By placing the separator at the point shown, instead of in the heating main, the steam is cleared of oil before it reaches the heater and the tubes are kept in much better condition. Furthermore, the amount of steam is more nearly constant and the separator may be more accurately proportioned for the work to be done. The amount of exhaust passing into the heating main varies with the outside temperature, and while the separator might be designed for maximum or minimum conditions there would be much of the time when it would be either too large or too small for the best results. In the arrangement shown a by-pass is provided around the trap in the drip pipe from the separator for use when starting up the engine, for reasons previously mentioned. In Fig. 4 the heater is connected on the "induction" principle, in which case the piping is simplified and the number of valves reduced. With this plan there is only one connection with the heater and the piping is so arranged that the steam will tend to be driven into it before any of the surplus passes outboard or into the heating system. A choice between these two methods will usually be governed by the available space or other local conditions. In the arrangement shown in Fig. 5 a receiver is provided between the separator and trap for taking up the increase in condensation, when the engines are first started, in order to prevent flooding the separator. A typical method for making the connections when a condenser is provided for summer use is shown in Fig. 6. In this case valves are so placed that the exhaust may be turned either into the heating main or condenser as desired, but in either case it will first pass through the separator. A return trap is provided with this arrangement for draining the separator, as this will work equally well either with a condensing or non-condensing system.

A trap of this kind has a large discharge opening, and

(Continued on Page 238.)

CONSTRUCTIVE SUGGESTIONS *for* HELPING *and* ELEVATING *the* PLUMBING BUSINESS

By Bill Hughes

Bill Hughes.

ONE of the current magazines contains a short story in which the leading character is a merchant with new and unique ways of doing business.

First of all, he advertises that he does not propose to be a pirate and take all of the profit in sight, but merely proposes to get a miserly little 20 per cent.

And in the second place, for the benefit of those chaps who hail from Missouri and must be shown, he has a bulletin board in his store on which are fastened the wholesalers' invoices and to which he invites attention.

His competitors plan to wreck his business, but as usual in the movies and fiction, the modest hero comes out on top smiling.

But the nub of it all is that while he lays claim to being a 20 per cent profit man, he also makes it clear that his overhead expense is 20 per cent of the purchase price of his goods and his calculations are made as follows:—Cost of goods plus 20 per cent for overhead, plus 20 per cent of that total to arrive at the selling price, or in other words cost of goods plus 44 per cent because he was wise enough to add that last 20 per cent to his overhead as well as to the cost of his wares.

And just because he wanted to be satisfied with a mere 44 per cent, his competitors try to put him out of business.

If 44 per cent is too small in the clothing business (as we are led to believe from reading this story), what per centage is too small in the plumbing and heating business?

Consider these facts. Clothing is subject to a rapid deterioration. You may buy a collar for fifteen cents, wear it a day or less and send it to the laundry, you pay 2½ cents for laundry service, four or five trips to the laundry and that collar feels more like a hack saw than anything else and it goes into the discard. You have undoubtedly paid out more for up-keep on that collar than you did for the collar in the first place, but you think nothing of that.

On the other hand, people buy plumbing and heating equipment and lose sight of that slang phrase "The First Hundred Years are The Hardest." They expect plumbing and heating appliances to last a life time WITHOUT any expense for up-keep and to a very considerable extent their expectations are realized.

What is a fair mark-up for plumbing and heating materials? Can it be possible that our wide price variations account for the attitude of people towards men of our craft?

A price guide in use in 2000 offices quotes 30-gallon galvanized range tanks at $21.00; another guide of even greater circulation shows a cost of $15.25 and a selling price $20.59; still another has a cost of $14.50 and a selling price of $24.65; again we find a cost of $11.00 with a sale price of $13.50; and finally a cost of $13.90 and a selling price of $18.50.

To summarize:

One 30-gallon galvanized iron hot water tank; regular type:—

Net cost $11.00	Selling price $13.50	Mark-up 23 per cent.
13.90	18.50	33⅓ per cent.
14.50	24.65	70 per cent.
15.25	20.59	35 per cent.

Who is right? Date of purchase of tanks and publication of price guide would probably account for the differences in cost, but what accounts for the wide variation in the mark-up, from 23 per cent in one case to 70 per cent in another, with two others at practically the same rate or 35 per cent?

We know that there is a crying need for Standardization and that divides itself into three groups; First, Standardization of Materials; Second, Standardization of Codes and Laws; Third, Standardization of Retail Prices.

Using $14.50 as a cost and with mark-ups of 23 per cent, 33⅓ per cent and 70 per cent we get the following selling prices: $17.84, $19.33 and $24.65, which is, to say the least, SOME variation.

Perhaps this whole subject matter can be handled by the Trade Extension Bureau. They could place it in the hands of a competent committee and the results of their efforts would soon be apparent.

In the matter of standardization of Materials, it would be possible for this committee to study the present day materials and their sizes. They could then decide upon a standard; issue a bulletin to the trade and in various manners give it publicity; and then it would be up to the trade to ask for and demand the standardized article.

Opening a specialty catalog, we find nine sizes of tank bulbs listed. Is it any wonder that the poor plumber finds it impossible to carry a complete stock with him and has to make trips to the shop for supplies (not forgotten tools as the funny papers would try to make people believe) and for every one of these trips we, the plumbing and heating contractors, are blamed. We are blamed for things which should be placed at the manufacturer's door. But if our committee should decide that a 2¾" tank bulb would fill all requirements and that on and after January First, 1920, it would be the duty of every contracting plumber in the United States to ask for and demand closet tanks built to conform with that ruling. It would only be a

matter of a short time until we could tell the public that their odd sized tank valves were relics of a past age and that it would be necessary and advantageous for them to replace the old with the new standardized valves.

We could carry smaller stocks; our journeymen would always have the right size bulb; they would wear out in use just as rapidly and we would not suffer the loss that we now do by reason of damage to bulbs in the journeyman's kit.

This would be but a starter. Other things could be taken up in due time and finally we should reach that stage where we could say to a salesman of new appliances "Get our Committee on Standardization to O. K. this and I will give you an order and not one minute sooner." And we can readily see that the expense of maintaining one experimental laboratory would be a great deal less than our present method of having twenty thousand more or less plumbing and heating establishments doing that work.

Locating odd materials in the various catalogs would lead to a study of the reasons for the manufacture and this would lead back to the local and state ordinances and codes. Lacking a national code, we might be able to attain almost the same ends by compiling a standard code approved by the National Association and by then corresponding with the various local and state associations in an effort to induce them to amend their ordinances and codes so as to conform with the standard code.

Frank discussion of mark-ups and selling prices should bring to light sufficient advice so that it would be possible for the committee to advise as to proper mark-ups for the various kinds of goods which we sell and to assist in the compilation of a price guide that we could all swear by.

One local association, in an effort to save its members time and money, adopted the following resolution:—

Whereas Merchant Plumbers are constantly solicited to buy new and untried appliances, tools and specialties, and

Whereas By reason of the fact that merchant plumbers are put to considerable expense and annoyance in proving the worth of such articles, same being in the experimental stage:

Be It Resolved that before placing an order for any new and untried appliances, tools and specialties, they be first referred to the Secretary's Office and by him submitted to a committee appointed for that purpose for either approval or disapproval.

And in addition to the evils of untried tools and materials, we are frequently confronted with estimating schemes, advertising schemes, and collection systems, all of which should be carefully scrutinized by competent persons before purchases are made.

In the past there has been too much experimenting for which the public has had to pay and for which the plumber and fitter has been blamed because he has been the connecting link between the maker and the user. Proper handling of this subject by an efficient committee would be highly advantageous to the public, the contractor and the manufacturer.

Thomas P. Moore, a well known master plumber of Waco, Texas, has opened a shop at 109 South Fourth Street, to specialize in plumbing and heating work. He conducted a shop for nine years at 226 West Douglass Street, and later at 235 North Ninth Street, where he was located for five years.

NEWS OF THE WORLD.

The Shipping Board announces that two gigantic ocean racers swifter and larger than anything afloat are to be built. Vessels will have 1,000 ft. in length with speed of 30 knots an hour; are to be oil burning and are designed to cross Atlantic in 4 days. Board has in view construction of two more of same type, and is considering Fort Pond Bay as Atlantic terminal.

Wall Street Journal states that the Carnegie Steel Co. is canvassing its employees at Youngstown to ascertain their views on company-employe co-operation in building homes. The U. S. Steel Corporation is fathering movement for workmen's homes through its real estate subsidiary.

"If you do not know how your premium stands on your government insurance write Uncle Sam." This is substance of a message now going to every soldier, sailor and marine discharged from service from the Bureau of War Risk Insurance.

American Chamber of Commerce at London reports six main causes of industrial unrest in Great Britain, as decided upon by joint committee of employers and employed appointed at recent conference of London manufacturers. They are: Suspicion; fear of unemployment; unfair division of profits and products; status in industry; extremist propaganda; economic fallacies.

Bureau of Chemistry states that cull oranges, lemons and grape fruit which were formerly wasted are now turned into many useful products developed by Bureau, which is conducting experimental work in Citrus By-Products Laboratory at Los Angeles, Cal.

H. Braddock, Director of Savings Division of Department, states that Commercial Travelers of America, 30,000 strong, have declared war on promoters of fraudulent stocks, and have announced their intention of carrying a warning to every city, town and village in their territory against fake stocks and get rich quick investments and against dealers who make practice of buying War Savings Stamps and Liberty Bonds below real value.

London dispatch to the New York American states that the successful trips of the R-34 has prompted American and British financiers to consider the formation of $30,000,000 trans-Atlantic corporation to be called "Anglo-American Airships, Ltd."

Representatives of Triple Alliance of British labor bodies decided, July 23, to take referendum vote among members on political demands of British labor, those relating including conscription, Russian intervention, release of conscientious objectors, use of military in labor disputes.

Wall St. Journal states that the Illinois Department of Agriculture claims that the "Big Five" allied packers have in cold storage over 85,971,000 lbs. of beef, 70,517,000 lbs. of pork, 7,893,000 lbs. of butter, 360,000,000 doz. eggs, release of which would be sufficient to materially decrease prices.

North German Gazette has published German's financial program agreed on by M. Erzberger and financial experts. Plan provides for raising $6,250,000,000 annually, of which $2,000,000 will be raised by war taxes and $4,250,000,000 from new sources.

In estimate based on July 1 sugar crop a crop of 2,216,000,000 lbs. is predicted. Such production would be 147,000,000 lbs. more than the average of preceding 6 years, during which total of 2 crops of beet and cane sugar has slightly exceeded 2,000,000,000 lbs. every year except in 1914-15.

QUESTIONS & ANSWERS

THE BEST METHOD FOR MAKING CONNECTIONS TO RADIATORS IN AN OVERHEAD SYSTEM OF PIPING.

Editor "Domestic Engineering":—I am requested to use the overhead system of piping on a job of heating and as I have never piped a job in this manner I would like a little information.

What is the best method of making the connections to radiators and what should be the size of the radiator valves?

Virginia. S. S. M.

Correspondent does not state the kind of a heating system he is to install, whether hot water, steam, vacuum or vapor. There are so many details regarding the installation of the overhead method that could be discussed,

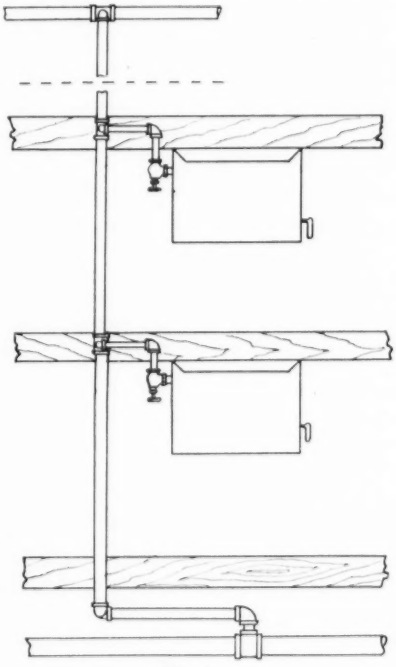


Fig. 1.

that we can make only a brief answer to the communication.

For steam there are two methods of piping: one as used for the one-pipe system and the other as used for the two-pipe system. That for the two-pipe system is used also for vapor and vacuum work. Fig. 1 shows the method of installing the drop supply riser and of connecting the radiators. The bottom of the drop riser should drip to a wet return or the connection should be trapped before connecting into a dry return. Fig. 2 illustrates the two-pipe method as might be used for vapor

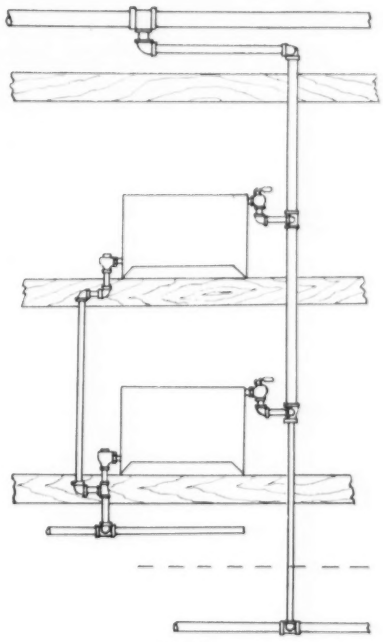
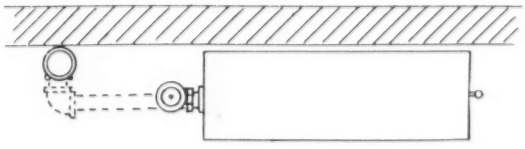
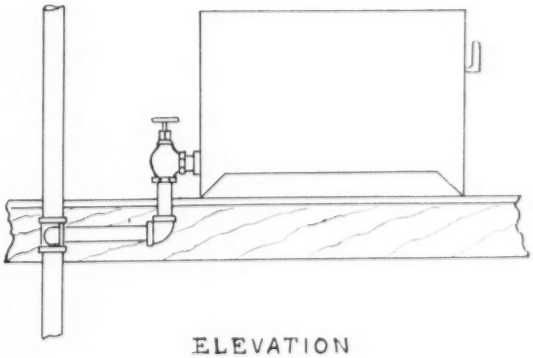


Fig. 2.



PLAN



ELEVATION

Fig. 3.

or vacuum heating. The supply is connected at the top of the radiator and a trap or similar device is used at the return end. For vapor or vacuum work, the returns may be connected above the water line, as indicated on the drawing, but the drip from the drop riser should drop into a wet return. If this is not possible, the drip may be connected into the return and air line but a radiator trap must be used at the base of the drop riser and the air and condensation should pass through this trap into the return and air line. For two-pipe work, the drop riser can usually be reduced in size as each radiator is supplied. After the lower radiator, or the last one on the line has been served, the riser may be reduced to the size of a bleeder sufficient to care for the condensation on the line. Usually a ¾-inch or 1-inch drip is sufficient. In the case of one-pipe connections, the riser must be kept sufficient in size to supply all radiators connected to it and also to care for all of the condensation from these radiators; therefore the drip from a one-pipe riser should be kept good size. The branch connections connecting radiators with the riser may be made above or below the floor, but should be made with swing joints on the riser. Fig. 3 shows a plan and elevation of a radiator connected with swing joints.

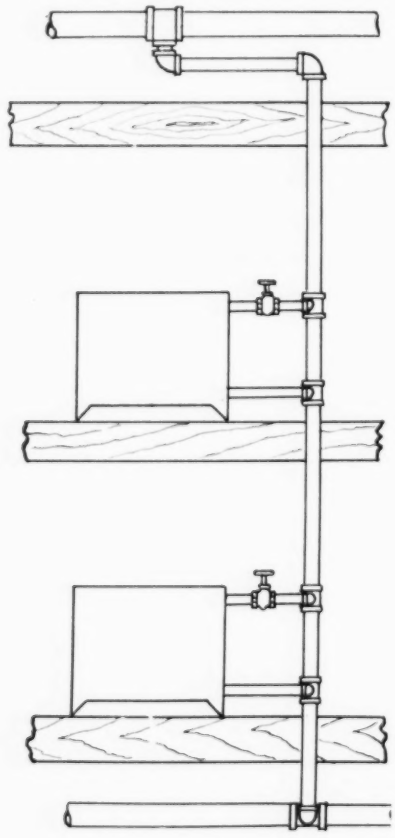


Fig. 4.

For hot water, two methods are available which we illustrate by Fig. 4 and Fig. 5. The flow connection is always made into the top of the radiator as shown. The riser shown on Fig. 4 should remain the same size its entire length, as it carries the entire circulation to and from the radiators connected to it. A special distributing fitting such as the O. S. or similar, used in place of the tees on the riser is a great help to an equal distribution of the circulation. If the method illustrated by Fig. 5 is used, the riser may be reduced in size as frequently as circumstances will permit. As the size of the flow is decreased, the size of the return riser is increased. The horizontal return main in the basement is a counterpart of the distributing piping at the top of the system.

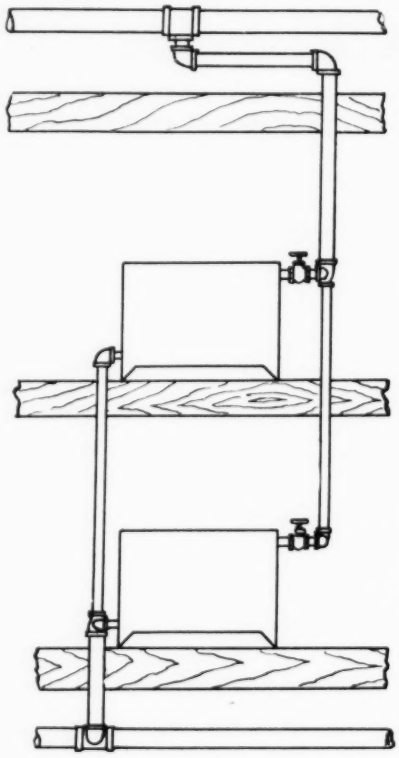


Fig. 5.

For vapor or vacuum, use small valves as called for by the system used and for hot water use 1 in. valves and connections for radiators 50 sq. ft. and under and 1¼ in. valves for larger radiators. For an accelerated system of hot water the size of the valves and connections can be reduced somewhat from those required for the open tank method.

HOW TO COOL AN ICE-BOX WITH COLD WATER PIPE COILS.

Editor "Domestic Engineering":—I have a problem on hand, and would like to ask you to help me. Our ice company has stopped the delivery of ice. As I have a good ice-box, would like to know if there is some way I can use the cold city water after it goes through the water lift and into the sewer. Can I change it so it will go through pipe coils in ice-box some way and keep it cool and then go into drain?

Michigan. A. B. H.

You can reduce the temperature of an ice box with cold water pipe coils, providing the water is cold enough. Usually the water from street mains is much warmer during summer than during winter. It may be 70 degress or more while the weather is warmest.

The ultimate success of your coil will depend upon the

temperature of the water, and the highest temperature desired in the ice box.

Suppose you want 50 degrees as a maximum in the ice box, and the water is 60 degrees, it is obvious that the scheme will be a failure. In such a case the water must be below 50 degrees.

We advise you to take some temperature readings and see what the actual conditions are. These readings must be taken during hot weather—say in August.

You will have to take the temperature of the waste water from the lift as it goes to the sewer. This will let you know whether the scheme is possible or not.

We are afraid, however, that you will find undesirable conditions. Even if the water is quite cold, say 50 degrees, which is unlikely during hot weather, and even if you can get along with an ice box temperature of 60 degrees, which is too high for food cooling purposes, the amount of pipe surface required may be too large to get in the ice box.

We will show you how to figure the thing for yourself after obtaining correct data about the temperatures.

One pound of ice absorbs 142 British thermal units of heat from the ice box. Then it is melted and runs to waste. One square foot of water pipe coil will absorb about one British thermal unit per degree difference in temperature between the water and the air in ice box per hour.

Suppose the ice box has taken one pound of ice per hour during warm weather, maintaining an average temperature of 50 degrees. And suppose the water temperature is 45 degrees, then the coil surface necessary to accomplish the same results will be about 30 square feet or 90 lineal feet of one inch pipe. Remember one pound of ice per hour equals only 24 pounds a day, which means a small ice box. Probably you cannot get 90 feet of one inch pipe in such an ice box. Even if you could arrange your coil surface so as to secure an efficiency of 2 B. t. u. per hour per square foot, per degree difference, still that would mean over 45 feet of one inch pipe.

Summing the whole thing up we do not think your proposition is practical unless you can get along with a higher ice box temperature than 50 degrees or have a coil temperature much lower than 45 degrees. We do advise you, however, to consider the advisability of attaching a small domestic refrigerating machine to the ice box, if you have electric power at hand. Many ice boxes are now successfully cooled that way.

WHAT IS A RE-SEALING TRAP IN PLUMBING?

Editor "Domestic Engineering":—Will you kindly explain what a re-sealing trap is and how it is constructed?

Massachusetts. E. F. P.

A re-sealing trap, as it is understood in plumbing, is a trap so constructed that it will automatically re-seal itself if siphonic action has occurred which has drawn air in through the trap seal. As air is drawn in through a trap by a lack of proper ventilation of the drainage system, for instance, a portion of the water which constituted the normal seal of a trap is displaced by the air. If the trap is not re-sealing it loses its seal this way. But if a trap holds enough water to fall back and retain a seal after siphonic action, that trap may then be termed a re-sealing trap.

The round pipe trap is not a re sealing trap, as can be seen by Fig. 1. At A is shown a sectional view through an ordinary round pipe (S) trap. Normally the seal is perfect, as shown in view A. No sewer gas can enter the house through such a seal. It is a perfect barrier of sewer gas or drain air. But if such a trap is not ventilated properly near its outlet at crown, then the water falling in outlet leg will siphon water out of the trap and cause it to lose its seal substantially as shown in Fig. 1, B. In this sketch the water lift in trap after siphonic action, is not enough to reach the bottom of the tongue. Therefore, the trap is unsealed and sewer gas may easily enter a building this way.

It is evident from the above that in order to have the re-sealing feature in a trap, there must be means somewhere in the outlet leg for holding a quantity of water

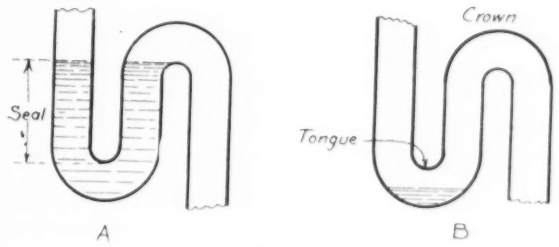


Fig. 1.

in reserve, so that it may fall to bottom of trap when siphonic action ceases, and so deposit enough water to reach above the tongue which re-seals the trap.

Fig. 2 shows two simple forms of re-sealing traps. That at the left is generally called a "bottle" trap—at the right a "pot" trap. At the left, the inlet pipe enters trap through center of top, the outlet being from side and near the top. At the right the inlet enters bottom of trap, while outlet leaves top of trap as shown. The normal water level is up at outlet mouth. But after siphonic action it may be much lower, perhaps down to

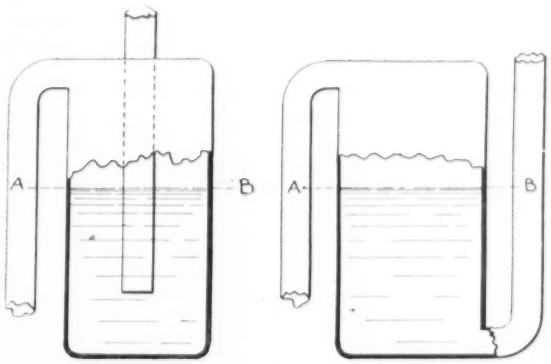


Fig. 2.

line A, B. Seldom, if ever, does a trap of this general type entirely lose its seal in service, because the sectional area of the body portion is large, as compared with inlet and outlet openings. The air, during siphonage, gurgles up through the water in trap body, but there is always, or nearly always enough water left to fall back and re-seal the trap when siphonage is stopped. That is a re-sealing trap. We believe all re-sealing traps operate on this general principle. Of course, such traps are not always as clean as round pipe traps, but they are very useful on certain work.

A re-sealing trap is just an anti-siphon trap with another name. A re-sealing trap is anti-siphon. An anti-

(Continued on Page 239.)

DO YOU BELIEVE *in* HANDLING SIDE LINES?

Kansas Master Plumber Says Tradesmen Should Be Specialists and Not "Jack of all Trades"—Do You Agree With Him?

"Domestic Engineering" Offers a First Prize of $15, Second Prize of $10 and Third Prize of $5 for the Best Answers to This Question. Contest Closes August 15th. Send Your Letter Today.

By Charles Bishop

THE letter written by R. M. Hull, of the Hull Plumbing and Heating Co., of Pittsburgh, Kansas, a town of 15,000 people, which was published on page 103 of the July 19th issue of "Domestic Engineering," has aroused much interest in the trade. Letters have already been received from different parts of the United States and even Canada, written by men who have been in business for many years and who, from experience, are qualified to speak authoritatively on whether or not side lines should be introduced into the plumbing and heating business.

It will be remembered that Mr. Hull took the stand that the plumbing and heating shop should specialize, as he put it, "first, last and all the time." He said that he did not see the advantage of carrying side lines. He did not say that they are unprofitable. He felt, rather, that, in the solicitation of business the plumbing and heating field is broad enough and big enough for a shop to keep busy—and make money—by confining its efforts to legitimate lines without bothering with side lines.

Some Plumbers Are Strong for Side Lines.

Many master plumbers say that it is profitable and consistent for them to handle side lines. In fact, though they are side lines, in a sense, these men do not consider them so, but rather as a composite part of their business. A concern of this character, in a good sized town in Southern Illinois, was asked whether it believed in handling side lines. This shop is located on one of the main streets and maintains a very nice display. The arrangement consists in part of small articles such as mantles, electric globes, toilet paper and bathroom specialties, closet cleaners, etc. When asked whether side lines were profitable, the proprietor said, "I should say they are! The profits I make more than equal my overhead expense without increasing it to any considerable extent. We find that side lines, if you insist on calling them that, get people into the habit of coming into our store. That's what paves the way to bigger sales-acquaintanceship with prospective customers. We give them service in many respects and they remember us. We get to know them by name because of the frequency of their calling. Yes, side lines are profitable, not only so far as the small sales are concerned, but largely because of what they lead to."

Specialists Are Equally Strong in Their Convictions.

The argument concerning side lines is not one-sided, by any means. There are a great many master plumbers and heating contractors who get ahead steadily, year after year, make money, own fine automobiles and splendid homes, to whom the suggestion of handling side lines would be received with some amusement, if not ridicule. They are the men who point out that their training concerned plumbing and heating—that's all. They speak with some pride when they state that their reputation locally was built up by giving their customers first class service in the plumbing and heating line and not through selling them a dish-washer, a roll of toilet paper or a 40-cent electric light. As one of the specialists puts it, "My experience has been that the plumbing and heating business is a profession within itself and should not be classed as a business that cannot be sustained without the introduction of side lines. I, for one, heartily endorse the idea of not introducing side lines into the plumbing and heating business, lines that rightfully belong in other establishments. We should devote our energy to the upbuilding and betterment of our legitimate lines which, if properly handled, do not need the aid of side lines to make them successful."

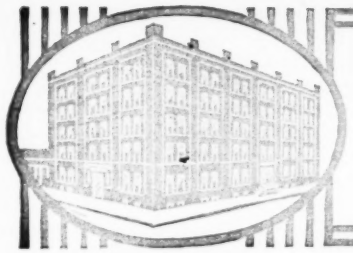
What is a Side Line?

Many will differ on what is termed a side line. There are some who confine their efforts to certain classes of work and anything outside of that they would term side lines. Take the shop that does a lot of residence work. They install bathroom equipment yet they don't push showers. They class a shower as a side line, but, as a matter of fact, it is actually a part of their business. The same is true of many other specialties.

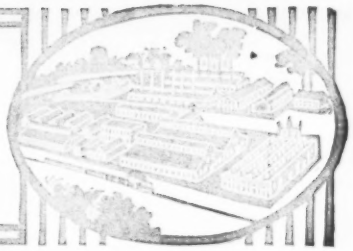
However, the matter is open for discussion, and everything points to a wide contribution of ideas on this subject. Mr. Hull has started something in claiming that a master plumber should be a specialist, and the gate is wide open for all who wish to express themselves on this subject, with the additional opportunity of getting their share of the $30 prize money that is offered for the three best letters.

These are the days of Trade Extension. Are side lines essential to get the most out of that movement?

Contest closes August 15th. Send your letter today.



Among the Wholesalers and Manufacturers



COMPANIES RECENTLY INCORPORATED.

The Eichenbaum Supply Co. has been incorporated in New York with a capital of $30,000 to deal in plumbing, heating and sheet metal supplies. The incorporators are J. Eichenbaum, S. E. Blackman and E. Eichenbaum, all of New York City.

The American Plumbing Goods Export Corporation, with a capitalization of $100,000, has been incorporated in New York City by M. S. Little, Hartford, Conn.; W. W. Bowers, Waterbury, Conn.; and G. Link, Jr., 17 Battery Place, New York City.

The Plumbers' Supply Co., of Missouri, has been incorporated with a capital of $80,000 by George E. Cooke, Julia E. Cooke and H. M. Boggess, all of Carthage, Mo., and A. B. Thomas of Joplin.

MONASH-YOUNKER CO. WILL CONTINUE TO MANUFACTURE PART OF ITS LINE.

The announcement in a recent issue of "Domestic Engineering" that the Harrison Safety Boiler Works, of Philadelphia, has purchased the right to manufacture Monash valves and pump governors of the Monash-Younker Co., of New York, prompts the latter company to write us that they have sold to the Harrison people only their line of reducing valves and pump governors, and the Monash-Younker Company will continue making its line of air valves and return valves for vacuum heating systems.

SPEAKMAN COMPANY IS ENLARGING PLANT.

Plans have been completed by the Speakman Company of Wilmington, Del., that will provide additional factory and foundry space. Construction is now going on that will double the present capacity of their plant.

BYRD PLUMBERS' SUPPLY CO. OPENS NEW BRANCH.

The Byrd Plumbers' Supply Co., Cleveland, Ohio, sent out announcements on July 24th that it had started a new plumbing supply house, located at 770 Central Avenue, between Woodland and Ninth, which is now open for business.

FRED A. ROUNDS SUPPLY CO. LEASES NEW BUILDING.

A large two-story brick building at 482-484 Fore Street, Portland, Maine, formerly occupied by the Delano Mill Co., has been leased by the newly organized Fred A. Rounds Supply Co., wholesale dealers in plumbing and steam heating supplies. Extensive alterations are to be made in the buildings and large salesrooms and offices are to be provided. When completed it will be one of the largest wholesale plumbing and supply houses in this section of the country. Fred A. Rounds, head of the new concern, was associated for some time with C. M. & H. T. Plummer, dealers in the same line. They have opened offices in the Fidelity Building to be used while the new establishment is being made ready.

AMERICAN RADIATOR CO. BUYS GROUND FOR NEW YORK FACTORY.

The American Radiator Co., 104 West Forty-second Street, New York, has acquired property on Newtown Creek, Laurel Hill, Long Island, extending to the Long Island Railroad, with adjoining plot on the Laurel Hill Boulevard, for a total consideration said to be $140,000, as a site for a six-story works.

STANDARD SANITARY MFG. CO. DECLARES DIVIDENDS.

The Standard Sanitary Mfg. Co., Pittsburgh, Pa., has declared a quarterly dividend of 2 per cent on its common stock and 1¾ per cent on the preferred, both payable August 9th to stock records of July 31st.

EAGLE-PICHER LEAD CO. PURCHASES ROBERT LANYON CO.

Announcement is made by the Eagle-Picher Lead Co., Cincinnati, Ohio, that it has purchased the plant of the Robert Lanyon Zinc and Acid Co., at Hillsboro, Ill., which consists of an acid works and a zinc smelter containing 3,200 retorts.

ACQUIRES FACTORY FOR NEW WORKS.

Dick Brothers, Inc., 120 Penn Street, Reading, Pa., manufacturer of steam fittings, pipe, etc., have acquired the three-story factory of the Reading Hardware Co., Third and Buttonwood Streets, for a new works. George W. Miller is president.

FOREIGN TRADE OPPORTUNITIES.

Commerce Reports of July 23rd, under Opportunity Number 30058, state that a firm in Italy desires the agency, on a commission basis, for all Italy, of wrought iron pipe, malleable iron pipe fittings, steam and water cocks and valves, machinists' tools, etc. Correspondence may be in English and references are required.

Opportunity Number 30064, July 24th, says that the agency is desired by a man in France for the sale of sanitary and plumbing materials. Correspondence should be in French and references are required.

The purchase and agency is desired by a firm in Belgium for the sale of wrought iron and steel tubes and fittings, malleable iron fittings, etc., according to Opportunity Number 30069. Quotations should be given c. i. f. Antwerp. Correspondence may be in English.

WESTERN TRADE GOLF ASSOCIATION MEETS NEXT THURSDAY.

There will be two meetings of the Western Trade Golf Association in August, the first of which will be played next Thursday at the Ridgemoor Golf Club, Chicago. This will be the first time that the association has visited this course, and being very accessible, it is expected that an unusually good crowd will be present, with the added possibility that a match may be played with the Eastern Trade Golf Association, which meets the same day in New York.

The Duffer's Cup.

One of the regular trophies that will be played for is the Duffer's Cup, which is shown in an accompanying illustration. This clever aggregation of pipe and fittings is awarded at each meet to the man having the worst score. It would seem bad enough to be high man without having to hire a truck to take home this "prize." Treasurer C. S. Pitkin is responsible for this trophy, but inasmuch as "Pit" shoots a pretty good game, there is not much chance of him taking his own medicine.

The second meet in August is scheduled for Tuesday, the 26th, at the Edgewater Golf Club, the home club of "Chick" Evans, the famous amateur.

TRADE EXTENSION BUREAU REPORTS QUESTIONNAIRE PROGRESS.

The Publicity Department of the Trade Extension Bureau contributes the following interesting information pertaining to Questionnaire No. 1, details of which were published in the last issue of Domestic Engineering.

Questionnaire—the magic word which raised the fighting strength of the American army from a shapeless mass to an operating unit is repeating itself, like history, in the initial work of The Trade Extension Bureau.

During the week of July 13, ten thousand questionnaires and accompanying letters were sent out to the plumbing and heating contractors belonging to the national associations. Before the work of mailing was concluded, replies began to flood the office of the bureau, Saturday, bringing in more than 200 replies. Monday's mail doubled that amount and each day of the week following the mailing of the circulars brought in huge stacks of the questionnaires, which are now being filed and classified. They will form the working basis of The Trade Extension Bureau, as they constitute a detailed business survey of the plumbing and heating industry of the country.

Assured that the information given in the questionnaires would be held strictly confidential, the plumbing and heating contractors showed no hesitancy in answering the thirty-four questions, relating to the intimate affairs of their business. Fully one-third of the questionnaires were accompanied by letters, giving additional information, together with complete samples of the bookkeeping systems in use, as well as the stationery forms employed in the office routine of the various shops.

The questionnaires have all been filed according to states, while the stationary forms have been classified according t their individual adaptation. From these the cost and bookkeeping systems will be compiled, which will form the basis of the bulletins to be issued monthly by The Trade Extension Bureau and mailed to the members of the craft throughout the United States. Valuable suggestions and advice have been gleaned from the files made possible through the classification of the various forms. Short cuts to business efficiency will be made possible through the liberal volunteering of information. Research work which would have taken years to complete was lessened to a negligible degree through the employment of the questionnaire form.

Eighty-five per cent of the plumbing and heating contractors demand a standardized and simplified bookkeeping system which will accurately show the business conduct of the plumbing and heating trades. A perusal of the forms of the various business records employed makes this fact all the more evident.

The lack of an adequate cost computation is also apparent. More than fifty per cent of the questionnaires received prove how little attention has been paid this important factor of successful business conduct.

Window displays and show rooms receive very little attention in the majority of cases. Less than three per cent of the questionnaires so far received show that plumbers and steam fitters give any attention whatever to the possibilities of advertising and publicity in connection with the building of bigger business.

Only about ten per cent of the replies state that nationally advertised products receive the preference in conducting shop sales. The reasons for the lack of interest are manifold, according to the questionnaries, and afford helpful material for sales talks in the future issues of the bulletin of the bureau.

The study of sales helps and literature sent out by the manufacturers and jobbers is taken up in a most limited way in the majority of the questionnaires. Estimates and prospects are seldom followed up in the proper way, while members of the craft are unanimous in their efforts to change the public prejudice against the plumbing and heating contractors.

The possibilities of trade extension work among the craft have multiplied to a point beyond the expectations of the members of the bureau and those interested in the promotion of keener and better business methods in the plumbing and heating trade. The contrasts afforded through the survey serve only to show the possibilities and opportunities of the Trade Extension Bureau.

ALL EXPORT RECORDS BROKEN.

A remarkable jump in exports during June brought the total for the fiscal year 1919 to more than $7,000,000,000, a new record, says the Department of Commerce.

HEDGES-ATKINS SUPPLY CO. ANNUAL OUTING.

A fine time was enjoyed by employes of the Hedges-Atkins Supply Co., of Denver, Colo., on the occasion of the recent annual picnic. The crowd started to gather early in the morning, and an idea of the number that participated may be gathered from the accompanying illustration. The employes, their families and friends were "snapped" outside the company's office, and then climbed on to autos and trucks and made their way through the business section. The destination of the picnic lay in an ideal spot in the Canyon, near Idledale, the trip through the beautiful Bear Creek Canyon being one to be remembered. When the party became settled there were immediate preparations for lunch, and a wide variety of "eats" was furnished by the company. After dinner the sports

Annual Outing of the Hedges-Atkins Supply Co., Denver, Colo.

began, and an exciting baseball game was staged between the office force and the shipping department, the former winning a well fought game. However, the tables were turned in the tug-of-war, when the boys who handle the materials proved that brawn is mightier than the pen. While the athletes were having a good time, others of different tastes were making their young lives happy by swimming, fishing, dancing or mountain climbing. Towards evening the crowd wended its way back to Denver, and after a cool ride through the Canyon, a social gathering in the office, with dancing, brought a happy day to a close.

EASTERN SUPPLY ASSOCIATION'S SUMMER BULLETIN.

Under date of July 28th the Summer Number of the Bulletin of the Eastern Supply Association was sent out from headquarters, 261 Broadway, New York City, and signed by President Joseph F. Evans.

A list of the various standing committees is printed on the first inside page of a 4-page bulletin, which is followed by "The President's Corner." President Evans' message is presented herewith:

Our June meeting was a success from every viewpoint—the attendance being particularly gratifying and I wish to express my pleasure.

The thirty minutes' time devoted to the salesman's hour proved its possibilities and we propose to continue to develop this feature for our next meeting.

Dr. Green was all that he was reputed to be and then considerable, while Mrs. John McClure Chase as an added unexpected attraction captivated all present with her magnificent ability as a pianist and vocalist.

Since our last meeting your President has attended a meeting of the Trade Extension Bureau in Atlantic City, N. J., as well as a session of the convention of the National Association of Master Plumbers, and he is free to state that both organizations appear to be making considerable progress.

I do hope that all of our members have done their full duty by contributing their just share to the Trade Extension Bureau. Remember, my friends, this is not a "pseudo birth," it's a child of progress which is destined—we hope—to produce practical results, and it's therefore not going to thrive on wind pudding. So if you have not already contributed, do so at once. Mr. Woolley is doing his share—it's up to you to do yours.

Massachusetts Sanitary Club

On the 14th and 15th of July your President was in Boston and vicinity attending a meeting of the Massachusetts Sanitary Club. This meeting was held at Fitchburg, Mass., and was attended by upwards of one hundred and sixty real representatives of the Manufacturers, Jobbers and Master Plumbers, and to say that it was the most successful State meeting I ever attended, is but a mild expression of my true feelings.

To begin with, Mr. Frank B. Lasette, President of the National Association of Master Plumbers, was there in his official capacity for the first time since his election which took place in Atlantic City a few weeks ago, and after listening to his remarks I am convinced of his genuineness. Here is a sample sentence of Mr. Lasette's talk:

"I want the members of the National Association of Master Plumbers to remember that it is their duty to patronize the local jobbers and manufacturers of Plumbing Supplies, because, they can scarcely be successful without your patronage, and you certainly can't win the field of commerce—the success you aspire to—without their co-operative assistance."

After reading the above, I am quite sure that the Jobbers—at least—who are not obsessed with nation-wide ambitions will agree that Mr. Lasette's conclusions as reached in the above sentence, contain all the essence of practical as well as sound philosophy.

Mr. Wm. J. Woolley, Secretary and Manager of the Trade Extension Bureau, was also present and in the course of his forty-minute talk, set forth in a very palatable, as well as a very convincing, manner the doings and contemplated doings of the Trade Extension movement. He was well received and listened to with marked attention.

At the conclusion of his talk several of those present interviewed him at close range and in every instance manifested much pleasure for the information received.

Your President was the next and last speaker, and while modesty prevents a recital of the statements made, he feels quite sure that all of those present felt kindlier disposed towards human nature when the conclusion of his remarks was reached.

From a Jobber's viewpoint our own members, Messrs. Thorndike and Hubbard, appeared the most active on this occasion, while Messrs. Carroll and Cassedy (the two C's) looked after the Master Plumbers' interests.

It was a great event and one well worthy of emulation by the other States in the Union.

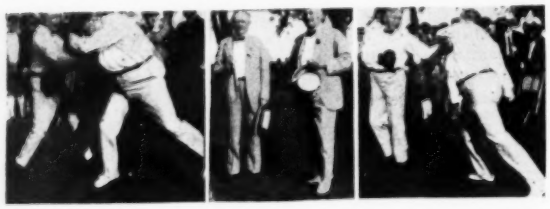
There are several very important matters presently occupying your Secretary's attention, and I sincerely hope that the greater part of our membership will lend its assistance to him while he is adjusting these very difficult problems.

Difficulties, you know, are not hard to overcome providing you are in receipt of the right kind of full blooded co-operation.

If you have any complaint to offer against the unusual conditions which we are encountering during the readjustment period, refer them to our Secretary.

James F. Conran, general sales manager of the Standard Sanitary Mfg. Co., Pittsburgh, Pa., was a visitor to Chicago this week.

E. E. Baker, president of the Kewanee Boiler Co., Kewanee, Ill., set a strenuous pace for the younger members of his organization when he pulled on a pair of boxing gloves and went three fast rounds with Valentine Jobst, a general contractor from Peoria, Ill. The occasion was a district meeting of the Rotary Clubs, held in Kewanee the latter part of July, the feature provided by Mr. Baker and Mr. Jobst being an impromptu affair,



as a result of some dares on the part of Mr. Baker. Considering that Mr. Baker is 64, while his opponent boasted a mere 52 years, there is reason for H. E. Pursell, "Prater" Dugger and other well known members of the company to look to their laurels. The decision at the end of the third round went to Mr. Baker. Photographs of the gentlemen in action and at rest are shown in the accompanying illustrations.

Arnold W. Kern has been appointed manager of the New Brunswick branch of Behrer & Co., whose main offices are at 81 Beekman Street, New York City.

August Naumer.

August Naumer, a retired master plumber of Brooklyn, N. Y., died on July 14th in a private sanitarium in Manhattan. He was 52 years old. He is survived by a wife and two children. Funeral services were held at his home, 1354 Bushwick Avenue, and interment took place in Greenwood Cemetery.

Edward Mahl.

Edward Mahl, who had been engaged in the plumbing business, at Hartford, Conn., since 1886, died at his home in that city recently. Mr. Mahl was a native of Norwich, Conn., and was 73 years of age. He had been active in business circles in his state for the past quarter of a century. For a time he was chairman of the board of health of Hartford and was past president of the Connecticut State Association of Master Plumbers. He also was prominent in Masonic and other fraternal circles.

Charles R. Norman.

Charles R. Norman, senior member of the plumbing firm of Norman & Ellingwood, of Danbury, Conn., died at a hospital in that city on July 14, aged 63 years. He had been ill for many weeks. Mr. Norman was born in Danbury and has lived practically all of his life in the city, with the exception of a brief period in New Mexico. He learned the plumbing trade when a young man and continued association with the business throughout his life time. He was first in business in Danbury in partnership with George P. Rice, but later for several years conducted the establishment alone. In recent years he had been associated with Harry H. Ellingwood.

Matthew A. Belford.

Matthew Augustine Belford, of Brooklyn, N. Y., for thirty years in the plumbing business, died on July 19th, following an operation at the Holy Family Hospital. He was 52 years old. Mr. Belford was an active member of the Brooklyn Master Plumbers' Association and of the Brooklyn Lodge of the Elks. He leaves a wife and brother, the Rev. John L. Belford, rector of the Roman Catholic Church of the Nativity.

Thomas S. Head.

Thomas S. Head, aged 70, who for forty-five years was engaged in Toronto in the plumbing business, died Tuesday, July 22nd, at the home of his brother-in-law, John Innis, at St. Anne de Bellevue, Ont. He is survived by his wife, two daughters and three sons. All three surviving sons had served in the Canadian army in France. A fourth son, Charles R. Head, was killed in action in France.

John J. Cummings.

John J. Cummings, 43, a prominent steamfitter of Syracuse, N. Y., died Saturday morning, July 26th, following an extended illness at his home, 107 Harold Street. He leaves a wife, and mother and three sisters. Interment took place on Monday morning, July 28th, in St. Agnes cemetery.

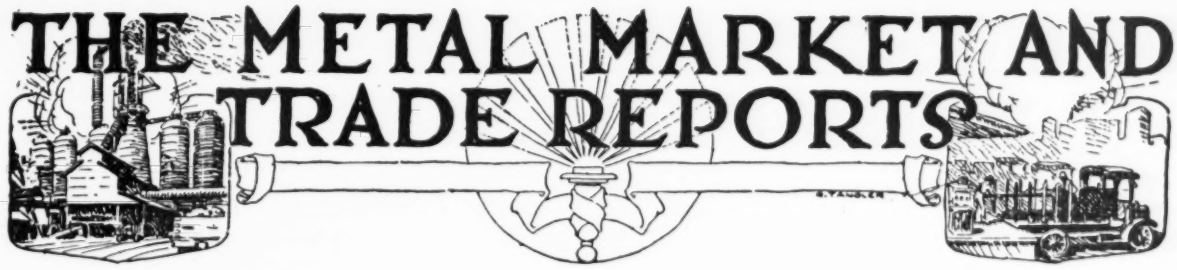
Andrea Lagomarsino.

Andrea Lagomarsino, aged 80, one of the oldest master plumbers of Memphis, Tenn., died at St. Joseph's Hospital last week after several month's illness. Mr. Lagomarsino had been a resident of Memphis for sixty years and was well known in the trade. The funeral was conducted from the residence of his daughter, Mrs. R. E. Hagerty, 383 Vance Avenue, and interment at Calvary Cemetery.

Mulford T. Sharp.

Mulford T. Sharp, a prominent Atlantic City Master Plumber, who for many years conducted an up-to-date establishment at 2821 Atlantic avenue, died suddenly last week at his home. He was a very active member of the local association and his funeral was largely attended by members of that organization.

THE METAL MARKET AND TRADE REPORTS



Steel and Iron.

The tone of the steel market is strong and several instances of advances were noted last week, particularly in wire products. Demand increased and the motor companies came in for considerable supplies of sheets and other items. Operation of the mills is estimated at about 75 per cent of capacity, and provided a strike does not intervene to spoil gains, there will be further advance in activity. Price shading has disappeared, although some independent operators are said to be ready to make slight concessions for sheets in order to bring out the maximum number of orders from consumers. For some time past there has been apprehension that labor troubles would result in slowing up activity in the steel mills, but the statement made last week by Judge Gary seems to have produced a reassuring effect and fears on that score have been allayed. There is considerable activity in the export trade reported, locomotive orders having been announced and the demand for railroad equipment for shipment from the United States is heavy. Some increase was noted also in activity of the carriers under Government control looking forward to the purchase of supplies with which to maintain efficient service. A further broadening of demand for structural steel developed last week and sufficient operations to create higher levels of operations than were reported in June.

Last week was one of increased activity in the pig iron trade, and while it is difficult to state definitely the amount of new business contracted for during that time, it is certain that at least 30,000 tons were ordered which represented the clearing up of outstanding inquiries which have been noted in the trade for some time. The reason for the increased activity came principally through the feeling that the market was moving up, and that higher prices might be announced any day. In fact, slight advances have already been made especially for bar iron and cast iron pipe. This situation is viewed as accurately gauging the increased strength of the market on the heavy demand for both these lines of products. It is conceded that pig iron is stronger than for a long time, and that chances are strongly against the maintenance of present day quotations. Iron for export is favorably situated at present and orders have been booked for about 10,000 tons of foundry iron. The price at which American producers are able to sell in London and elsewhere in the world are very favorable when compared with the best prices which foreign interests are able to obtain, which gives greater confidence to the trade here. We quote pig iron prices as follows:

No. 2X, Philadelphia	$29.10
No. 2 Southern, Cincinnati	28.35
No. 2 furnace, Chicago	26.75
Basic Valley, furnace	25.75
Bessemer, Pittsburgh	29.35

Copper.

There was a quiet tone throughout all of last week in the copper market, but prices continued firm and closed the week at the highest. The range was as follows: Spot and July, 23½ cents; August, 23½ cents to 23¾ cents, and September 24 cents per pound. One feature of the market last week was that no general price was obtainable on last quarter delivery. In fact, sellers do not quote beyond September, which indicates strength of the general situation. The wire drawers and brass plants still continue to come in for supplies, and this is holding the market steady at the present time.

Tin.

The tin situation holds out little in the way of hope as long as there are any restrictions whatever on the importation of the article. The War Trade Board has changed the date for the permission of shipments of pig tin and metal alloys containing tin from countries of origin from September 1st to August 15th. While this means that conditions should become more active in the future it still points to a dull condition for some weeks. Prices for tin are regarded as more or less nominal in the face of very quiet conditions. In the general market the price for Straits spot is between 70 cents and 71 cents per pound. On the Metal Exchange the quotation is 70 cents, but no sales were reported.

Lead.

The lead market continues firm, the quotation of the leading interest being 6 cents per pound, New York delivery, and 5.75 cents East St. Louis. The outside market is a little higher, the range being from 6 cents to 6.05 cents, New York. Demand is reported steady and activity was considerable last week.

Spelter.

The situation in the spelter trade was more or less dull all of last week, although prices were held up and considered favorable with the price being around 8 cents for prompt shipment.

Other Metals.

Quotations on other metals in New York are as follows:

Aluminum (in 50-ton lots)	33 cents per lb.
Antimony (Chinese and Japanese)	9½ cents per lb.
Solder, No. 1	28 cents per lb.

New York Old Metal Market.

The following prices are current for old metals:

	Buying.	Selling.
Copper, heavy	19¼ to 19¾ cents	20 cents
Copper, light	16¾ to 17 cents	18 cents
Brass, heavy	12 to 12¼ cents	13 cents
Brass, light	9¾ to 10 cents	11 cents
Brass, turnings	12 to 12½ cents	13 cents
Tea lead	4½ to 4⅝ cents	6 cents
Lead, heavy	5½ to 5⅝ cents	7 cents
Zinc	5¼ to 5½ cents	6 cents
Solder joints	12 cents	13 cents
Mixed babbit	6½ cents	7 cents
Cocks and faucets	16 to 16½ cents	17 cents
Pewter	35 to 37 cents	38 cents
Cast aluminum	24 to 24½ cents	25 cents

Chicago Old Metal Market.

Chicago wholesale dealers' prices are nominally as follows:

	Buying.	Selling.
Heavy yellow brass	11¼ to 11¾ cents	12 cents
Brass, light	10¾ to 11 cents	12 cents
Brass, medium	11¼ to 11¾ cents	12 cents
Red brass	15¾ to 16 cents	17 cents
Copper, heavy	19¼ to 19¾ cents	20 cents
Copper, light	16¾ to 17 cents	18 cents
Lead, heavy	5 to 5¼ cents	6 cents
Tea lead	3¼ to 3½ cents	4 cents
Zinc	5½ to 5¾ cents	6 cents
Solder joints	10½ to 11 cents	12 cents

LABOR TROUBLE AND RACE RIOTS DEMORALIZE BUSINESS IN CHICAGO.

Chicago, July 30th.—America's second largest city is experiencing one of the worst crises in its history and business is virtually paralyzed. Race riots, in which more than a score have been killed and hundreds wounded, a street car strike—with elevated railroad transportation also suspended, and a building lockout still in effect, all these have contributed to a serious business situation in Chicago. Production at manufacturing plants in the plumbing and heating field has been considerably curtailed owing to the inability of workers to reach the factories at regular hours. Deliveries have also suffered to a great extent. Motor trucks that, ordinarily, would be loading up early in the morning, have been utilized to carry employees to work, with much lost time owing to the heavy congestion of traffic. Thousands of troops are mobilized in an effort to restore peace. So far there has been very little encouragement in the settlement of labor troubles, though the past twelve hours have seen considerable improvement in the racial situation.

It is to be expected that this condition has had a depressing effect on the local building market. With the rapid increase in the volume of building operations during the last three months, there was promise of sufficient construction, particularly in homes, apartments, etc., so that by late Fall, at least, much would have been done to partly restore the equilibrium between supply and demand as regards these structures. As it is now, unless the present labor trouble is quickly settled, the outlook, locally, is anything but encouraging. The only consolation is that the greatly increased earnings of all classes of buildings, especially for residential purposes, will make them so attractive as investment propositions that the market will be stimulated for this class of property.

GENERAL SITUATION IMPROVES IN NEW YORK.

Labor differences which during the past two months have constituted practically the only deterrent to a general resumption of building construction in the New York district, seem on a fair way to final and definite settlement. An immediate turn for the better came last week with the adjustment of the brick bargemen's strike. The dearth of brick which developed more than a month ago through the strike and restricted activity on many buildings is broken. Immediately upon settlement of the bargemen's differences loaded barges were rushed down the river from production points on the Hudson and practically every job which had been retarded by lack of this material resumed operations. Now it is asserted, construction work should regain the impetus lost during the strike. Prices are steady as $15 a thousand base.

The building trades employers also expressed confidence that a way has been found to stop further postponement of construction through fear among owners that the day of $15 a day plumbers and $10 bricklayers was imminent, by embracing the Boston plan of wage stabilization. When the Boston officials became confronted with successive demands for increases from skilled building trades employes and it became apparent that if the housing situation is ever to be relieved some stabilization of workingmen's wages would sooner or later have to be worked out, the mayor called the leaders of the building artisans to a conference and proposed that a general wage scale be fixed applying to all lines, and that this agreed top price be held for a definite period, sufficiently long to permit owners to proceed with building plans that had, for the most part, been indefinitely abandoned.

It is now proposed by the employers of New York to investigate the merits of the Boston plan.

The material market shows great strength and is steadier as to upward movement. Material interests are outspoken in their belief that building material quotations for this year have about reached top, except in so far as new freight rates, towing charges and labor increases at manufacturing points are concerned.

Last week showed still a further increase in demand for plumbing materials in New York and prices are firm.

FUTURE FOREIGN TRADE DETERMINES CONTINUANCE OF AMERICAN PROSPERITY.

For the first time in our history as a nation the assurance of our continued prosperity rests with the future of our foreign trade, it is declared by the National Bank of Commerce in New York, in the monthly discussion of business conditions presented in its magazine, Commerce Monthly for August. The bank continues:

"The period of our industrial isolation is as completely behind us as is the period of our political isolation. Our industries were expanded and speeded up during four years of war in order to supply not only our own markets but also to meet a share of the world's demands. It is inevitable that the high level of war exports will not be maintained. A decline from that level is desirable, but a return to the pre-war basis would result in serious industrial disturbance. We have surpluses to sell. Europe needs our commodities, and a way must be found to finance those purchases on credit. Such credit, whatever the financial machinery set in motion, must eventually be based on savings of the American people. The domestic consumer inevitably will ask why he should curtail his consumption in order to assist the consumers of other nations to buy on credit in this country, and to bid against himself by means of the very credits he has helped to extend. The answer is that an enormous destruction of the world's actual and potential capital has taken place during the last four years. Although that destruction took place in Europe, economically considered the world is now a unit, and we are vitally interested in the replacement of that capital. If the American consumer believes he may with impunity continue in unrestricted consumption and escape feeling the effects of the shortage in the world's capital, he is in grevious error.

"Expansion of domestic consumption after the restrictions of war was certain and desirable. The stimulus provided our industry by this increased consumption tided us over the first difficult months and greatly aided the transition to a peace basis.

The Pipe Market.

Quotations on less than car lots of full weight steel pipe are as follows:

	Butt Weld		Lap Weld	
	Blk.	Galv.	Blk.	Galv.
⅛ to ⅜ inch	46½	18½	.....	.....
½ inch	50½	34½	.....	.....
¾ to 3 inch	53½	38½	.....	.....
2 inch	.....	.....	46½	32½
2½ to 6 inch	.....	.....	49½	35½
7 to 12 inch	.....	.....	44½	29½

The quotations apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong steel pipe in less than car lots, quotations are as follows:

	Extra Strong				Double Extra Strong			
	Plain Ends		Plain Ends		Plain Ends		Plain Ends	
	Butt Weld		Lap Weld		Butt Weld		Lap Weld	
	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.
⅛, ¼ and ⅜ inch	37½	12½	.....	.....	.....	.....	.....	.....
½ inch	42½	17½	.....	.....	30½	.....	.....	.....
¾ to 1½ inch	46½	21½	.....	.....	33½	.....	.....	.....
2 to 2½ inch	47½	22½	.....	.....	35½	.....	.....	.....
3 inch	47½	22½	.....	.....	.....	.....	.....	.....
2 inch	.....	.....	39½	14½	.....	.....	28½	.....
2½ to 4 inch	.....	.....	42½	17½	.....	.....	30½	.....
4½ to 6 inch	.....	.....	41½	16½	.....	.....	29½	.....
7 to 8 inch	.....	.....	35½	10½	.....	.....	22½	.....
9 to 12 inch	.....	.....	30½	.....	.....	.....	.....	.....

With threads only, the basing discount is 1½ points lower. With threads and couplings the basing discount is three points lower. The quotations apply to less than ca lots.

Quotations on full weight genuine iron pipe, in less than car lots, are as follows:

	Butt Weld		Lap Weld	
	Blk.	Galv.	Blk.	Galv.
⅛ to ¼ inch	23½	+5½	.....	.....
⅜ inch	24½	+4½	.....	.....
½ inch	28½	8½	.....	.....
¼ inch	33½	15½	.....	.....
¾ and 1 inch	33½	15½	.....	.....
1½ inch	33½	15½	.....	.....
2 inch	.....	.....	26½	10½
2½ to 6 inch	.....	.....	28½	13½
7 to 12 inch	.....	.....	23½	8½

These quotations are f. o. b. Pittsburgh, and apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong genuine wrought iron pipe, with plain ends, and in less than car lots, the quotations are as follows:

	Extra Strong				Double Extra Strong			
	Butt Weld		Lap Weld		Butt Weld		Lap Weld	
	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.
⅛ to ⅜ inch	17½	+10½	.....	.....	.....	.....	.....	.....
½ inch	22½	+ 5½	.....	.....	.....	.....	.....	.....
¾ and 1 inch	28½	½	.....	.....	.....	.....	.....	.....
1¼ inch	28½	½	.....	.....	.....	.....	.....	.....
1½ inch	28½	½	.....	.....	.....	.....	.....	.....
2 inch	.....	.....	22½	+ 2½	.....	.....	.....	.....
2½ to 4 inch	.....	.....	24½	+ 1½	.....	.....	.....	.....
4½ to 6 inch	.....	.....	24½	+ 1½	.....	.....	.....	.....
7 to 8 inch	.....	.....	14½	+11½	.....	.....	.....	.....
9 to 12 inch	.....	.....	8½	+16½	.....	.....	.....	.....

These retail prices are f. o. b. Pittsburgh, and apply to all quantities except in car lots. With threads only, the basing discount is 1½ points lower. With threads and couplings, the basing discount is 3 points lower.

To ascertain the price in your city, deduct the proper less-than-carload freight rate from Pittsburgh to that city. Example: Base price on ½-inch black steel pipe is 50½ per cent, Pittsburgh, the less-than-carload rate to Patson is 17 cents, and the price, therefore, freight allowed to Patson 48$\frac{5}{10}$ per cent; on galvanized, 33$\frac{5}{10}$ per cent. All other sizes to be figured on a comparative basis.

The Pipe Market in New England and in Parts of New York State.

In New York State on all points on the Hudson River, and in all of New York State south and east of Albany, in all New England and for export, quotations are as follows:

Wrought Steel Pipe.

	Black	Galv.
⅛ to ⅜ inch	38	4
½ inch	43	26
¾ to 3 inch	47	31
2 inch lap	38	23
2½ to 6 inch	42	27
7 to 12 inch	33	16

Extra Heavy.

	Black	Galv.
⅛ to ⅜ inch	31	+ 2
½ inch	37	12
¾ to 1½ inch	42	18
2 to 3 inch	43	19
2 inch lap	34	10
2½ to 4 inch	37	14
4½ to 6 inch	31	12
7 and 8 inch	25	4
9 to 12 inch	18	+ 3

Double Extra Heavy.

	Black	Galv.
½ inch	16	.....
¾ to 1½ inch	21	.....
2 to 2½ inch	23	.....
2 inch lap	14	.....
2½ to 4 inch	16	.....
4½ to 6 inch	15	.....
7 to 8 inch	2	.....
14 to 20 inch O. D.	20	.....

Genuine Wrought Iron Pipe.

	Black	Galv.
⅛ to ¼ inch	12	+25
⅜ inch	13	+24
½ inch	18	+ 4
¾ to 1½ inch	25	5
1¼ inch lap	net	+19
1½ inch	12	+ 6
2 inch	16	+ 2
2½ to 6 inch	18	1
7 to 12 inch	6	+12

Extra Heavy.

	Black	Galv.
⅛ to ⅜ inch	3	+30
½ inch	13	+17
¾ to 1½ inch	21	+11
1¼ inch lap	net	+34
1½ inch	10	+21
2 inch	13	+17
2½ to 4 inch	15	+13
4½ to 6 inch	6	+14
7 to 8 inch	+ 5	+26
9 to 12 inch	+12	+33

For pipe handled through shop or cut to length, add 10 per cent to the net price of pipe.

Cutting and threading 12 inch and smaller—net list prices.

Cutting and threading 14 inch and larger—25 per cent discount from list prices.

Cutting only, two-thirds of the threading price.

These prices include cartage to point of destination, if same is within cartage limits—for domestic purposes. If outside the cartage limits, they are f. o. b. shipping point, with actual freight allowed to destination, not exceeding 20c per 100 lbs. When shipped for export, the price includes cartage to point of shipment, if same is within reasonable cartage limits—with no freight allowance.

The Post Office Department announces that, effective at once, parcel post packages for Germany will be accepted, up to a weight limit of 11 pounds, at the postage rate of 12 cents a pound or fraction of a pound.

Acceptable articles of merchandise will be accepted for transmission under the provisions of special export license No. RAC-52.

A special set of dies in these machines form the various bends used in "Wiseco" Products.

J.B. WISE. Inc

Manufacturers of Plumbe

Mention DOMESTIC ENGINEE

They are making the "bends" for "Wiseco" traps

YOU may wonder how it is possible to bend a piece of brass tubing into the shapes shown at the side of this machine.

With such highly modernized appliances as are used in the "Wiseco" plants nothing known to present day artisans is impossible. This machine, which we perfected, takes a piece of brass tubing and by lever pressure, bends it to a certain shape.

"WISECO" Products

Slight imperfections in the contour of each bend are certain to occur. These imperfections are removed by placing the bends in another machine patented by us. The parts then come out perfect in shape, size, etc.—not a blemish is found.

Mechanical precision is essential in the production of such high-grade goods as "Wiseco" products and nothing that will materially aid in their manufacture is found wanting in the "Wiseco" organization.

These machines and many others in our plants were developed by our own engineers and no other manufacturers of Plumbers Brass Goods employ them.

The operation of these machines is decidedly simple. Nothing can be said of them except that they form the bends with remarkable rapidity and precision. The tube cannot bend in any other shape than that which is desired.

...c., Watertown, N.Y.

...lumbers' Sanitary Brass Goods

AMONG THE PLUMBING AND HEATING CONTRACTORS

Illinois

Chicago and Vicinity.

The contract for the installation of the heating system in the $500,000 addition to the factory for Wm. Wrigley Jr., at 2001 West Thirty-ninth has been awarded to Wm. A. Pope of 26 North Jefferson Street.

Modern plumbing in the $125,000 West Side Office Building of the Chicago Telephone Co., will be installed by O'Callaghan Bros., 157 North Market Street. Structure will be three stories and will be built at 15-23 South Seeley Avenue.

"Joe" Story and "Tom" Magan. Photo taken at recent outing of Chicago Master Steam Fitters' Association. From "Domestic Engineering" Photo.

E. Stevenson, 6142 South Hermitage Avenue was the successful bidder for the contract to install the plumbing equipment in seven bungalows to be built on Albany Avenue between Sixty-fifth and Sixty-sixth Streets by E. C. Arthurs.

S. Kerman, 1332 South Sangamon Street, has been awarded the plumbing contract on the $12,000 store and loft building at 568 West Twelfth Street by I. Stein.

J. J. Cahill, H. B. McClelland, James McAlear and W. B. Graves, taken at recent outing of Chicago Master Steam Fitters' Association. From "Domestic Engineering" Photo.

United Plumbing & Heating Co., 3010 West Twelfth Street will install the steam heating system.

D. E. Kinsella, 7309 Vincennes Avenue has secured the contract for the installation of modern plumbing in the $20,000 four-family apartment building being built at Calumet Avenue and Seventy-third Street by G. A. Buettner. The heating contract has been awarded to Ideal Heating Co., 6312 South Wentworth Avenue.

Chas. Horberg, 3233 West Twelfth Street is building a $5,000 addition to his store at 1209-1211 South Sawyer Avenue and has let the steam heating and plumbing contracts to the United Plumbing and Heating Co.

Modern plumbing and gas fitting in the $60,000 three-story factory at 1139-1143 North Wood Street for Meyer & Co., will be installed by Frank G. Winkler of 841 North State Street and the installation of the heating system will be taken care of by the Highland Heating Co., 1120 West Seventy-ninth Street.

J. Kellar, 5915 Iowa Street, has been awarded the contract for the installation of the plumbing equipment in the $10,000 two-story apartment building at 2419 West Monroe Street.

The contract to install modern heating equipment in the seven-story $300,000 loft building at the northeast corner of Van Buren and Throop Street has been secured by Wm. Hoier, 701 North Wells Street.

E. M. Solon, 4412 North Kedzie Avenue is taking bids on subcontracts for work on the 24-family $60,000 apartment building to be erected at 3323-3325 Wilson Avenue. It is to be three stories and basement 119x66 ft.

Other Cities in the State.

Jules Greenwald of La Salle will install plumbing and gas in the New Majestic Theatre to be built at Second and Goodin Street for E. Newman. Elow System of Chicago has the heating contract. The theatre building will be two stories, 60x120 ft. and will cost about $35,000.

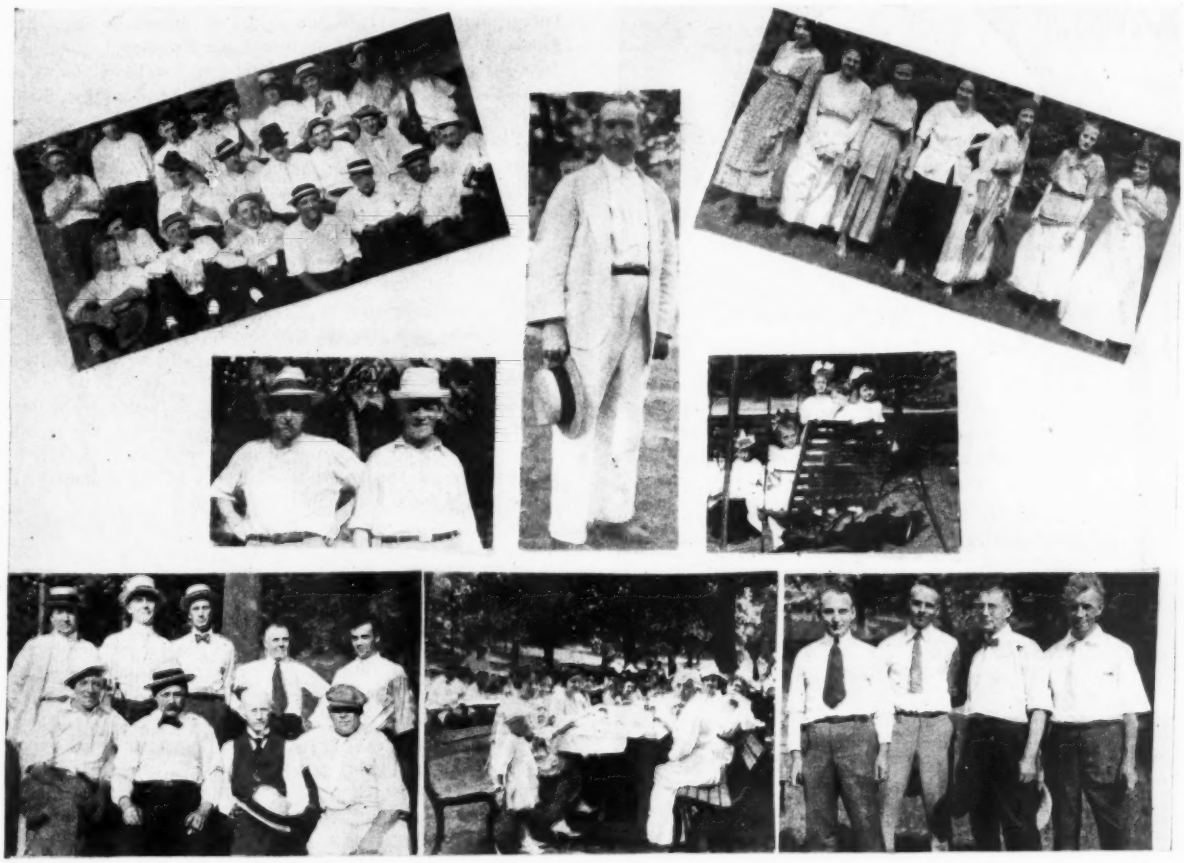
Wm. G. Baker, 521 South Fifth Street, Springfield has secured the contract to install modern plumbing in the Wm. Tipps residence.

The Moline Heating & Construction Co. of Moline was the successful bidder for the heating and plumbing contracts on the $80,000 furniture building for Deere & Co.

Annual Outing of Peoria Master Plumbers' Association.

About four hundred master plumbers and journeymen, with families and friends, participated in the annual outing of the Peoria Master Plumbers' Association, which was held on Saturday, July 26th, at Bradley Park, the city's natural playground. A full day was enjoyed and many outdoor sports constituted a fine program, the Arrangements Committee having planned for amusements and contests to keep every one busy, from the youngest to the oldest. A clever joke was pulled by those well known humorists, Dan O'Connor and Andy O'Neill, whose mysterious bottle was found to contain only brown sugar and warm water. As usual, the baseball game furnished the main item on the program and

the teams, under the captaincies of Charley O'Brien and Raleigh Errion, put up a fine battle. Lack of accurate figures prevent us from giving the final score, but it is rumored that the park commissioners will have to furnish a new home plate, the old one having been entirely demolished by being trampled under foot. While the ball game was in progress the ladies and children held their races. A feature was a tug-of-war between the masters' and journeymen's wives. Valuable prizes were given to the winners, and there was a fine commissary department at all times during the day. The evening was enjoyed with dancing in the pavilion, and while it was going on S. A. Kinsey, 94 years old, a past master plumber and president of the Kinsey & Mahler Co., motored out to the park and shook hands with a few of his old friends.



The Annual Picnic of the Peoria Master Plumbers' Association.

Among the salesmen in attendance were L. A. Haverton, Baker Specialty Co.; Frank Pfeiffer, Kewanee Boiler Co.; Frank O. Tinthoff, James B. Clow & Sons Co.; George W. Boeddener, American Radiator Co.; John C. Jamieson, George J. Roberts Co.

Kentucky

Louisville and Vicinity.

Improvement is being shown in every department of the building trades, contracts being awarded more regularly and a very fair volume of small work is reported. A good deal of residence construction work is under way, consisting of small residences, popular priced flat houses, and one or two apartments. A few new plants are under construction, and the general demand for building material, plumbing supplies, etc., is good. Work was started late this year, and as a result many manufacturers of building supplies played a waiting game, with the result that it is now hard to secure material, especially wall plaster, lime, cement, etc. Building lumber is a little scarce, principally pine, and prices are advancing so fast that it is feared that still higher prices will retard business.

Labor is fairly plentiful, but high priced, and prices are advancing steadily. Just where price advances on labor and material will stop no one seems to know, but general markets are continuing to advance, and labor is maintaining wage scales.

The Louisville Master Plumbers' Association has not been meeting regularly for the past few weeks, due to hot weather, vacations, etc., but held a meeting on Monday evening, July 21, at which time, general discussions were heard, relative to the general building situation and prospects for business. Members were found to be very optimistic concerning the outlook, feeling that there would be a considerable amount of business from now until cold weather, and probably throughout the winter, as the demand for residence property is greater than the supply. Health authorities and community workers allege that due to the shortage of residence property, much property is being occupied that should be condemned on account of unsanitary conditions.

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Finished to match the wood of the seat

Wisconsin

Plumbing Division of Wisconsin State Board of Health Reports Progress.

The Wisconsin Department of Engineering has sent out its record of quarterly progress for the second quarter of 1919, ending June 30th. It is the report of the State Chief Engineer on many subjects, including the Sanitary Engineering Division and the Plumbing Division of the State Board of Health. John G. D. Mack is State Chief Engineer, E. J. Tully, State Sanitary Engineer, W. G. Kirchhoffer, Consulting Sanitary Engineer, and Frank R. King, State Plumbing Inspector.

Mr. Tully's report covers water supply, sewage treatment and disposal, industrial waste treatment and disposal and stream polution. Mr. Kirchoffer's work is classified under two heads—the State Board of Control and the State Board of Health, and covers sewage disposal inspection trips, etc.

The report submitted by Mr. King reads as follows:

Predictions of a year ago that the close of the war would be followed by an unprecedented revival in building operations are now being fulfilled. The state of Wisconsin is in the midst of an era of construction that is keeping all lines busy and contributing to the general prosperity. The plumbing industry is no less active than the rest, and this activity has contributed to the increased labors of the plumbing division's field force and administrative staff.

Probably at no time has there been so much schoolhouse building and remodeling as in the period just past. This condition promises to continue throughout the summer and longer. The examination of plans and specifications for new projects has entailed increased work for this division. Much satisfaction is derived from the fact that these new structures are planned with an eye to increased sanitation, and we have been able to suggest many improvements to bring them up to the standards that should govern the well-being of our school children.

The legislature took important action during the quarter along lines of sanitation and health, affecting directly the future work of this division. The state plumbing law was amended in accordance with our recommendations, so as to bring under the licensing provisions all cities above 3,000 population. The present limit is 5,000. The amendments also lower somewhat the schedule of license fees in the interest of a more equitable assessment upon the various classes of artisans. A public comfort station law was enacted,—the first in the United States—which requires every city and incorporated village in the state to provide public comfort station facilities. The division is now engaged in formulating a state code governing the location, construction and care of such stations, but is prepared now to offer preliminary advice upon these subjects. It is anticipated that many communities will install stations in connection with existing public buildings, such as city and village halls, libraries, fire stations, etc. Others will probably desire to build more pretentious individual stations of artistic type. Every community will be supplied with copies of the forthcoming code.

Affecting the work of the plumbing division materially, the passage of another law is of important significance. This brings the control of all public water and ice supplies, and sewage disposal works, under the supervision of the state board of health.

The division has frequent requests for suggestions looking to the abolition of outbuildings where public sewerage and

water supply are available. The department's form ordinance is recommended for cities needing such reforms. Several cities are using the "zone" ordinance to bring about the gradual elimination of the privy where public sewerage is adjacent and can be utilized.

There has never been a period, perhaps, when more activity in building public sewer systems was manifest. Our records show that construction of both sewer systems and waterworks has begun or is in prospect at the following places: Abbotsford, Altoona, Brillion, Campbellsport, Gillett, Markesan, New Holstein, Seymour, and Viroqua. The following will build, or are agitating early building of sewerage systems: Cadott, Cumberland, Durand, Gays Mills, Kilbourn, Oostburg, Rib Lake, and Spooner. The list is probably incomplete.

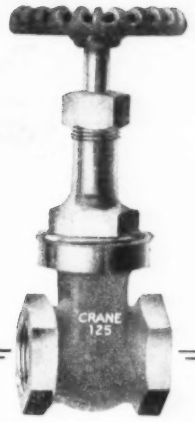
There is no assurance that costs of materials will be much lower for a long time to come, and no good reason exists why communities in dire need of such public improvements should longer delay. This department is encouraging Wisconsin cities and villages to adopt these benefits at once. Records show that disease decreases in proportion to the increased connection of homes and industries with sanitary sewer systems and a common water supply.

The division has given considerable attention to plans of fair associations for modern toilet facilities. DePere, Marshfield, and Superior are examples where these necessary accommodations are being installed in a sanitary manner, adequate for the needs of thousands. It is hoped the present season will witness as many modern comfort stations installed on the grounds of Wisconsin fairs as marked the year 1918.

The state is experiencing a notable expansion of the canning industry, in which Wisconsin is a national leader. The department co-operated in the formulation of rules and regulations governing the sanitation of pea canneries, which rules have been adopted by the Wisconsin Pea Packers' Association for use in its inspection service. Such a code had its inception in the state department of engineering, which brought together the various state departments concerned, resulting in the preparation of the code referred to. The rules cover the subjects of conformance with state and federal regulations, premises, sewerage system, waste disposal, by-products, buildings, toilet rooms, cloak rooms, lavatories, towels and drinking water, machinery and equipment, containers, employes, viner stations, and water supply. They have received the endorsement of the state board of health, the dairy and food commission, the state department of engineering, the industrial commission and the commissioner of agriculture.

The division conducted a state wide examination on April 29th for the licensing of plumbers at Beloit, Eau Claire, and Milwaukee. Fourteen candidates for master and 23 for journeymen licenses presented themselves. Nine masters and 11 journeymen passed, and five candidates for master and 12 for journeyman licenses failed. The division prepared also for the July examinations, scheduled for Eau Claire, Janesville, and Milwaukee for July 15, for which some 50 candidates are registered.

In 256 cities visited by the three assistant inspectors during the second quarter, 669 inspections of plumbing, water supply, sewage disposal and drainage installations were made, of which number 624 were approved. The rejections—45 amounted to about 7.1 per cent of the whole number. The orders numbered 31. The inspectors made 381 visits to plumbing shops and assisted some 212 property owners and plumbers with plumbing problems. The character of the plumbing installations coming under their purview was reported good in most instances, and improvements were noted



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Brass Gate Valve
No. 440

for 125 pounds steam working pressure

These Valves are constructed with Parallel Seats, and the bearing of the Wedge being central, it acts uniformly on all parts of the discs; consequently it will force the discs to their seats and have an equal bearing on all parts.

No better value can be bought for the price.

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Philadelphia	St. Louis	Aberdeen
Newark	Kansas City	Great Falls
Camden	Terre Haute	Spokane
Baltimore	Cincinnati	Seattle
Washington	Indianapolis	Tacoma
Syracuse	Detroit	Portland
Buffalo	Chicago	Pocatello
Savannah	Rockford	Salt Lake City
Atlanta	Grand Rapids	Ogden
Knoxville	Davenport	Sacramento
Birmingham	Des Moines	Oakland
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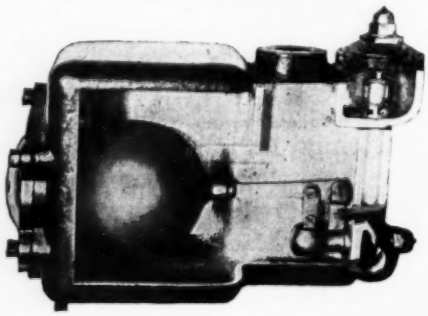
Used All Over the World

The B & B Blast Trap is especially designed for handling large and variable amounts of condensation quickly and effectively.

It is a combination float and thermostatic trap, entirely automatic in operation.



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almost universally. General sanitary conditions relating to waste disposal were found fair. Plumbing and drainage ordinances were drafted for five cities. Union Grove and Whitefish Bay adopted ordinances, and such measures are pending adoption at Cudahy, Cadott, Grand Rapids, Hartford, Horicon, Marinette, Marshfield, Mayville, Portage, Reedsburgh, Rhinelander, Washburn, Wauwatosa, West Bend and Merrill.

The department assisted in the matter of new water and sewerage systems in 11 cities, in 66 investigations of existing sewage disposal plants, in eight similar matters by correspondence, and in 20 cases concerning school toilet and water supply accommodations. Residential sewage disposal systems were designed and blueprints furnished for 14 applicants. Fourteen industrial plant toilets, water supply and sewage treatment tanks were designed, and seven original plans were prepared illustrating proper plumbing, etc. Thirteen dairy waste complaints were investigated and aid given to remedy conditions. The inspectors reported a total of 111 conferences with officials and public talks. The educational bureau furnished approximately 20 press articles on these subjects to the newspaper and trade press. The department assisted other state offices in twenty-one cases. No prosecutions were reported.

Connecticut

Louis Margolis, of New London, has purchased a building at 670 Blank Street in that city which he will remodel for his plumbing business.

H. Kravath has been awarded the plumbing contract in connection with the rebuilding at a cost of $12,000 of the J. A. Gillies house at Hamden, a suburb of New Haven. The house will have fourteen rooms and three baths.

Ford & Keyes, of New Haven, will do the plumbing and heating work in connection with extensive changes and improvements in the residences of G. R. Leavenworth in that city.

The city of Hartford has let contracts for a public comfort station to be erected in Colt Park. The station will cost $8,000. Work will start at once.

A new plumbing ordinance recently adopted by the board of aldermen at Shelton has been approved by the mayor and is now in effect. Under the new regulations, no plumbing work or plumbing alterations can be made without permits or until the same has been approved by the plumbing inspector.

New Jersey

Asbury Park Master Plumbers' Outing.

The Master Plumbers of the Asbury Park Association gave their Annual Outing and Clam Bake at the Green Gables on Pleasure Bay on July 15th. The plumbers and a great number of salesmen left Asbury Park in the morning and went to the outing grounds in machines. On arriving, a ball game was started between the plumbers and salesmen.

Plumbers vs. Drummers.

Captain of Plumbers—H. W. Havens.
Captain of Drummers—W. J. Hepburn.

Plumbers	Drummers
Ernest Stauch	W. J. Hepburn
L. Salmon	V. Fitzpatrick

J. A. Connors	Harry Mellendoff
W. J. Lapine	Charles Cleary
A. R. Milne	Dan McIntyre
Irvine Height	A. R. Heap
H. W. Havens	T. W. Terry
C. H. Rudloff	E. Hanlon
Geo. Turner	E. C. Smith

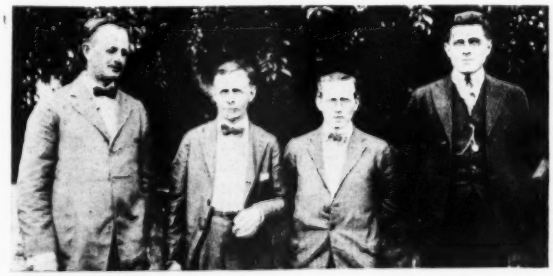
For the first time in the history of such outings, the drummers put it over the plumbers by a score of 11 to 5. It was a very good game and hard fought from begin-

Group of Master Plumbers and Salesmen at Asbury Park Outing. From "Domestic Engineering" Photo.

ning to end, but in the fifth inning the players were beginning to feel rather tired, and decided that they had had enough, so the game was called to indulge in a more restful game, that of eating clams.

It was a good old-fashioned clam bake. Every one sat around a large table and was served with clams, fish, chicken, corn, potatoes and lobster. The last course was nice ripe watermelon. During the meal Andre VanCleve found a Jazz Band which furnished a lot of music that was very enjoyable.

Every one sang and a better time was never had. The plumbers had a little song for the salesmen.



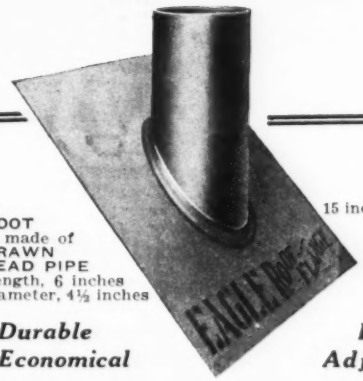
President Archie Height, Secretary and Treasurer Charles H. Walton, Sergeant-at-Arms Harry J. O'Brien and Vice-President H. W. Havens. Taken at Asbury Park Master Plumbers' Outing. From "Domestic Engineering" Photo.

After the meal Mr. VanCleve, acting as toastmaster, called on the president of the association, Archie Height, who gave a little address on Getting Together. Then several of the salesmen were called on. Among them was Thos. J. Berkstresser who expressed his pleasure on being with them and promised to bring the horse the next time.

The afternoon was spent on the bay in motor boats, where every one enjoyed himself.

Among the salesmen and manufacturers' representatives present were the following:

R. J. Donaldson, John A. Murray & Co.; E. A. Hanlon, A. R. Milne, Pierce Butler & Pierce Mfg. Co.; H.



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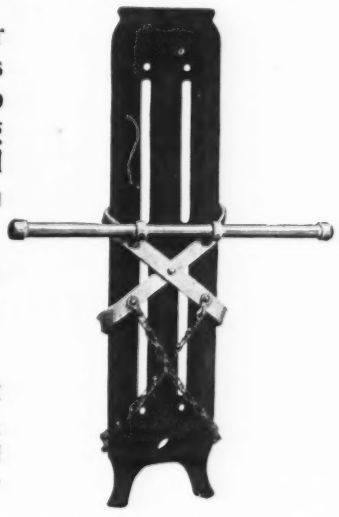

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Weight 9 Lbs.

$15.00 a Set
and Money Back in 10 Days If Not Satisfactory

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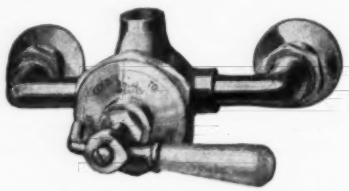
Simple Durable Handsome Reasonable

A Mixing Valve

that *Actually Mixes*

under all conditions



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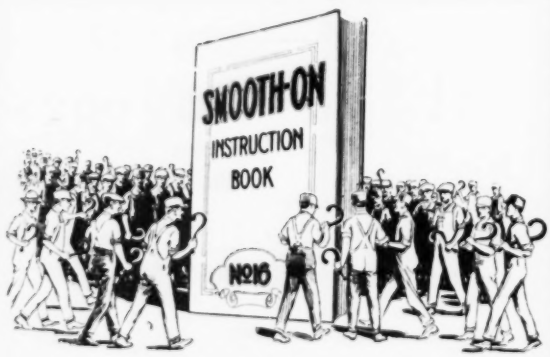

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Other Cities in the State.

George McVoy, 203 East Fifth Street, Plainfield has secured the contract to install plumbing and heating equipment in Capt. H. B. Saunders home. Mr. McVoy is building a home for himself in which he will install modern plumbing and heating systems.

Master plumbers of Elizabeth have reorganized and formed a new association. The officers are J. E. Desmond, president; John Dravis, vice-president; H. A. Rath, financial secretary and treasurer and F. Holland recording secretary.

C. Lowe, 438 Jersey Street, Elizabeth has secured plumbing and heating contracts on the following: residence for John Rudd, six houses for B. Sass, and twelve houses for M. Shapiro.

Wm. Rita has opened a plumbing establishment in Roselle Park and will install modern plumbing and heating in four houses for Donald & Johns and in a new residence for Wm. Baltz.

Fred A. Vanderweg, 100 Chestnut Street was the successful bidder for the plumbing and heating contracts on the following: the Corbet residence, A. Lamy residence and the $22,000 building for E. & B. Levy, and plumbing in the Fifth Ward school in Bayonne.

A plumbing supply department has been added to the service of the Perth Amboy Hardware Company on Madison Avenue, it has been announced by I. T. Madsen, president. The company will carry a full line of plumbing materials for retail and plans to make the new department the best and most complete in this section of the state.

An up-to-date display room with bathroom fixtures, furnace and heating systems and general plumbing equipment for the kitchen, pantry and laundry is to be fitted up.

W. O. Reinhart, for many years in the Elizabeth store of the Elizabeth Hardware Company will be in personal charge of the new branch and will endeavor to make the new department live up to the firm's slogan of "Perth Amboy Hardware for Service."

Mr. Reinhart's name is added to those of S. G. Levine, mill supply department; R. D. Howell, manager, retail department and R. K. Thurston, manager, superintendent traffic department.

Albert M. Kuhn, of Elizabeth, has recently been awarded contracts for the installation of plumbing and gas fitting in the Chas. Seiss home, and for the installation of plumbing and heating systems in the following: residence for Mr. Horre in Elizabeth and in the C. Hoffman home in Union.

H. Wilhelm's Sons, of Elizabeth, will install plumbing and heating eqiupment in a warehouse for E. & B. Levy, residence for F. Hahn, residence for M. Jones and they also have the plumbing contract at the shipyards.

The McFadden Plumbing & Heating Co., 301 Burnett Street, has been awarded the contract for the installation of the ventilating and heating systems in the Washington and Nathan Hale Schools.

F. E. Decker will remodel the plumbing system in S.

Maroni's residence. He also has the contract to install plumbing and heating systems in a residence for L. Wilmurt and in the Ricket Blueing Works.

James F. Hefferty, 21 Throop Avenue, was the successful bidder for the plumbing and heating contracts on three houses for J. A. O'Connell on Mickel Street, residence for Joseph Doyle on Baldon Street and in a residence and store for K. Revolnskey.

Henry A. Rumler, of Metuchen, has secured the plumbing and heating contracts on a two-family flat for Joseph A. Berks, the plumbing contract on a four-family flat for John Nagel and contracts for the plumbing and heating equipment in a bungalow for H. Nelson.

John H. Moore, 1707 Atlantic Avenue, Atlantic City, will install plumbing and heating systems in the Bankers Trust Building and in six cottages for Samuel Kerns.

Pennsylvania

Pittsburgh and Vicinity.

S. P. Trimble, of the Pittsburgh Builders' Exchange and chairman of the Reconstruction Committee of the National Association of Builders' Exchanges, is using a letter received from A. A. Arnould, of Davenport, Iowa, with good effect on the building business in Pittsburgh and the surrounding district. The letter states that the building business is in a flourishing condition despite the high prices and that there have been more sales of real estate this year than in the last 10 years together. He states that as long as the farmers can raise $2 corn and turn it into $22 hogs it does not matter if other items are comparatively high.

Judge and Mrs. McNichol and Mr. and Mrs. George Moeller, all of Philadelphia. Taken at the recent convention of the National Association of Master Plumbers. From "Domestic Engineering" Photo.

The Pittsburgh Gage & Supply Co. has plans on file and bids are being taken for an addition to the concern's plant at Thirtieth and Liberty Avenue. A number of local contractors are figuring the job, plans being in the hands of the W. G. Wilkins Co., Westinghouse Building.

One of the largest plumbing contracts of the present

WILHELMI and MODERN Copper Range Boilers

Unexcelled in design, material and workmanship.

Interior thoroughly tinned.

No iron used in construction.

Guaranteed against collapse.

Always satisfactory. You can safely install them on your best jobs.

Order from your jobber. Made by

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FOR lasting quality and true capacity use "KOVEN" Pure Iron, Double Row Riveted, Galvanized Range Boilers, or NACO Galvanized Range Boilers made of open hearth steel. These boilers may be bought of jobbers everywhere.

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SANITARY PLUMBING FIXTURES
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A line representing the most advanced ideas in Sanitation, Economy of Operation and Ease of Installations.

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Dole PACKLESS GRADUATED RADIATOR VALVE

Embodies a new and exclusive DOLE principle by which you can have every degree of opening required in vacuum or vapor steam heating.

This Adjustment is easily made while the steam is on.

Nothing like it on the market.

Furnished with the DOLE without extra cost.

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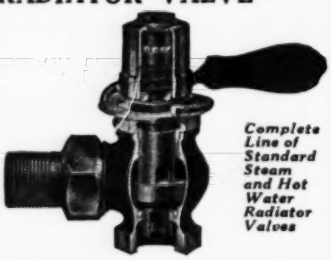

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Cistern and Riveted Pressure Boilers

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Everlasting

They not only *last* but give continuous satisfactory service.

Made in any size, pressure or capacity desired.

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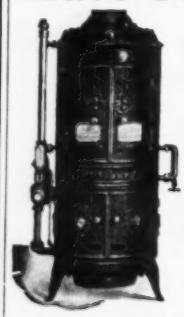

This is water heater season. Big profits are coming in to progressive plumbers everywhere from the sale of Pittsburgh Water Heaters. Are you getting your share? If not it is high time you were adding them to your line. They are the most profitable heaters you can handle and the most satisfactory to your business interests.

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Pittsburg Water Heater Company

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LOOK IN THE TANK

Ballcocks, Flush Valves, Hinges, Flush Levers, Etc.

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year is expected to be let when bids are opened for the five-story brick building to be erected by B. F. Bain, owner, at Page and Fontella Streets, at a cost of $102,000. The Henry Shenk Co., general contractors, are preparing to let the sub contracts.

The experience of the Pittsburgh district school board, which now finds itself compelled to take on 10 building projects at once at an additional cost of 100 per cent, is doing much hereabouts to boost the building game. At the recent meeting of school directors it was found that about 100 per cent has been added to building costs since these projects were first considered and postponed because materials and labor were regarded as excessive. The board has $3,000,000 with which to launch the building plans, but with added costs this amount is but half enough. The only remedy seen by the board is another bond issue for $3,000,000 or more, since the additional facilities must be provided without further delay. The superintendent informed members of the board at the last meeting that construction of the George Westinghouse high school, the steel and other materials for which already have been bought, is most urgent.

Philadelphia and Vicinity.

Chas. H. Hipple, 220 North Fifteenth Street, has been awarded plumbing and heating contracts on a new apartment house at Swathmore for A. M. Garrett. Consideration, $35,000.

Tinnerman & Co., Sixtieth and Arch Streets, have been awarded the plumbing contract on a new public garage that is being erected at Sixty-first and Ludlow Streets. Consideration, $18,000.

Frank Bros., Thirteenth and Courtland Streets, have been awarded plumbing and heating contracts on new church and gymnasium that is being erected at the corner of Fifty-fourth and Wyalusing Avenue, for Advent Church of New Jerusalem.

California

San Francisco and Vicinity.

No particular change has been noted in the building situation in and about San Francisco, except, perhaps, an increased number of contracts under way for apartments and commercial buildings.

One of the most interesting of the many proposed plans for high-class apartment houses is the idea of Miss G. L. Shaffer, a realty operator of this city, which is now being worked out by Architect Henry C. Smith. The group of buildings which is to form the structure will cost in the neighborhood of $150,000 and will be located at Camino del Mar, opposite Thirty-second Avenue, commanding one of the best views of the Golden Gate and the Marin hills in the city. The location lies close to the Lincoln Park golf links and near the point of the picturesque end of the Lincoln Highway. Part of the property fronts on the very edge of the beach and it is proposed to have a wharf for fishing and boating, a specially warmed sea-bathing tank and a playground on the beach, all of which may be reached by a glass-covered inclined scenic elevator running from the street above to the water's edge some 350 feet below. The apartments will be from five to ten rooms, each to be equipped with private elevator entrance, pergola and roof garden. The structure will be supplied with steam heat, hot water, laundry, garage, billiard and club rooms and ballroom.

The Gilley-Schmid Co., Inc., has contracted for a low-pressure steam heating system for a four-story apart-

ment building on Jones Street near Sutter. The same firm will install a similar system in a three-story and basement apartment building on the southeast corner of Van Ness Avenue and Union Street at a cost of $1,686.

The contract for plumbing work in a church, Sunday school and study building at Fifth Avenue and Irving Street, has been secured by the H. Williamson Co.

Plans are being prepared by J. A. Magee for a five-story brick apartment house to contain two and three-room apartments. This structure is to be erected on Post Street at an estimated cost of $35,000. The same architect is also getting plans in readiness for a six-story steel frame and reinforced brick semi-fireproof apartment house for the Nob Hill district, to cost in the neighborhood of $100,000.

Architect G. A. Applegarth is now taking figures on the construction of a four-story and basement class C apartment house to be erected at the corner of Octavia Street and Broadway at an estimated cost of $70,000. In addition, he is figuring on a one-story addition to the apartment house of reinforced concrete located on the west side of Polk Street near Washington.

Other Cities in the State.

Plans have been prepared by A. W. Smith and building permits requested for the erection of eight two-story houses to be built on Mandana Boulevard, Oakland. The residences are to cost from $3,000 to $3,500 and are to contain the most modern bathroom fittings, water heaters, etc.

Bids are now being taken on a four-story class C office building to be erected on 16th Street near Telegraph Avenue in Oakland at an estimated cost of $60,000. Plans include facilities for further expansion. The building is to contain offices, hospital rooms, kitchen, lunch room, fountain, oil-burning heating plant, ventilating equipment, etc.

Architect James W. Plachek of Berkeley is now working on plans for a two-story and basement apartment house to contain four 4-room apartments to be erected in Oakland at an estimated cost of $14,000.

To John R. Faulkes of Oakland was awarded the contract for the construction of 30 portable school buildings for the Oakland Board of Education. The figure was $35,940. The buildings are to be distributed generally throughout the city to take care of the increased attendance.

Architect O. E. Evans of San Francisco is preparing plans for twenty-five five-room bungalows for the Occidental Building and Investment Co. of Albany for erection on the Spaulding Richmond-Pullman townsite. The buildings are to cost $3,000 each and will be equipped with first-class plumbing fixtures.

Construction of the new assembly hall for the San Jose State Normal School is to be started by E. T. Leiter & Sons of San Francisco. The new building will involve an expenditure of $85,000.

The proposed $250,000 hotel for Lindsay is to be financed largely by local interests. The plans call for a structure of modified Italian architecture to contain 138 outside rooms with all modern conveniences.

T. A. McDougall of Sacramento has been awarded the contract for the erection of a new manual training building for the high school at Tomales.

S. G. Smart of Bakersfield has been awarded the contract for the construction of three frame buildings and the alterations of a two-story hotel into a tubercular hospital for the Tri-County hospital for Merced, Madera and Stanilaus counties. The contract price is $26,400.

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TRANSMIT-O-PHONE

A new super-sensitive listening device, to locate hidden or leaking pipes. Traces "trouble" instantly on any pipe line.

Indispensable to the plumber.

Pays for itself on first job.

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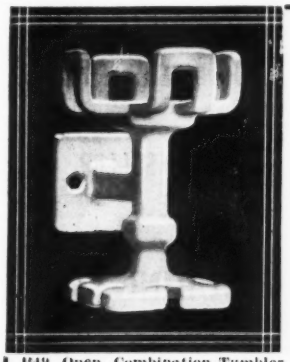

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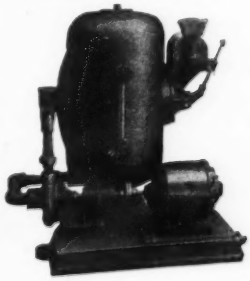
For Low Pressure and Vapor Heating Systems



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Battle Creek, Mich.

The
SāVō AIR MOISTENER

For HOMES, OFFICES, SCHOOLS, HOSPITALS
Fill with water and hang on back of any Steam or Hot Water Radiator, OUT OF SIGHT.
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Saves Health, Furniture, Pianos, Fuel, Paintings, Books, Plants and indoor trim.

A TRADE WINNER—AN EASY SELLER
Extensively advertised in leading Magazines. GOOD MARGIN OF PROFIT to Dealers. Write for FREE Booklet, Prices and Discounts.

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39 S. La Salle St., Chicago
Also Mfrs. of Savo All-Year-Round-Flower Boxes

The Heating Harvest

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HOFFMAN
Instantaneous
Automatic Water Heater

Every Hoffman you sell and install adds one more satisfied client to your list.

Models to suit any specification.

Write for literature.

The Hoffman Heater Co.
Lorain, Ohio
Branch Offices in All Large Cities

Missouri

St. Louis and Vicinity.

The heating and plumbing contract for the new C. D. Meyer apartments on East Walnut Street, Springfield, has been awarded to the Reynolds Heating Co. The work will aggregate more than $13,000. The apartments will be built in the 400 block of East Walnut Street at a cost of about $75,000, under the general supervision of Ralph Camp, of Belleville. The heating and plumbing contracts call for the very latest in fixtures and equipment. Built-in tubs, kitchenette sinks and a vapor heating system will be installed.

Creditors of the Nelson Co-Operative Association, Inc., and Nelson O. Nelson, founder of the N. O. Nelson Manufacturing Co., of St. Louis, manufacturers of plumbing supplies, will receive 85 per cent from the bankruptcy of the association and Nelson, as the result of the declaring of a dividend for this amount by William Bell, Federal referee in Bankruptcy, according to New Orleans dispatches.

An increase in building operations is shown in the monthly report of condition in the Eighth (St. Louis) Federal Reserve District, issued Friday, July 25, by William McC. Martin, Federal Reserve Agent. Manufacturing enterprises report good demand, but shortage of material, skilled labor and transportation facilities, in various cases, the report states. In June, it is shown, 725 building permits were issued in St. Louis for work aggregating $2,016,711, as compared with 514 permits in June, 1918, for $891,863 worth of work. There were similar increases in three other cities of the district, Louisville, Ky., Memphis, Tenn., and Little Rock, Ark.

The firm of Bates & Martin, of St. Louis, has been awarded the contract for installing the East Madison (Ill.) sewer system which will open to residences, a large section of Madison heretofore unoccupied because of its low area and consequential lack of natural drainage. Work will commence at once.

The center of trade interest in St. Louis is the awarding of contracts for the main building of the monster plant of the General Motors Co., of Detroit, which will be erected in the new industrial belt near Union Boulevard and Natural Bridge Road. It will be three stories and will cost about $1,000,000. Besides this the contract for the erection of a three-story office building in connection with the plant will be awarded. The latter will cost in the neighborhood of $200,000. The plumbing and piping for heating in connection with these two structures will surpass $50,000. Plans have been reviewed by contractors and the successful bidders will be announced next week. There are also a number of smaller jobs for which bids have been made.

Indiana

Indianapolis and Vicinity.

Callon Bros., 24 South Alabama Street, have just received the contract for the installation of an extensive underground heating system in the Pennsylvania Railroad Co.'s shops at Richmond. The contract calls for an expenditure of approximately $15,000.

The Cotton & Weibke Co., 1720 East Tenth Street, was the successful bidder for the plumbing and heating contracts on the new $8,000 residence that is to be erected at 4192 Central Avenue for T. R. Baker, 116 East Thirty-sixth Street.

B. C. Torelle & Co., of 915 Hume Mansur Building, have

been awarded the contract for the installation of the plumbing and heating systems in the new hotel and apartment building that is to be erected at Meridian and Vermont Street for the E. G. Spink Co. The new structure will be erected at a cost of $600,000.

Freyn Bros., of 31 West Michigan Street, have been awarded the contract for the installation of the plumbing and heating systems in the new church that is to be erected in the southern part of the city for the Villa Avenue Methodist Protestant Church. The edifice will cost about $50,000.

The plumbing and heating contracts on the new $50,000 motion picture theater that is to be erected at 40 and 42 West Ohio Street for the Home Building Co. have been awarded to Clark Bros., of 217 East Ohio Street.

Cincinnati.

The accompanying photograph, which has been received through the courtesy of Business Secretary A. J. Burke of the Cincinnati Master Plumbers' Association, shows two of Cincinnati's prominent master plumbers—William J. Doud and Thomas Canary, both of whom are on the board of directors; A. Lincoln Fecheimer, a leading Cincinnati architect, and also Mr. Burke. Mr. Doud and Mr. Canary devote their energies to large contract

Rear—A. J. Burke and Wm. T. Doud. Front—A Lincoln Fecheimer and Thos. Canary.

work and their record shows many fine accomplishments of lasting credit to the plumbing fraternity. Mr. Burke is very modest when speaking of his own attributes, but all members of the association know him as an exceptionally able representative and a fine fellow, one who has done excellent work in the association ever since he became connected with the organization.

Hot Weather Helps

Sales of Water Supply Outfits

Plenty of good, cold water appeals to a prospective customer at this time of the year. Get busy and turn the inquiries into orders for

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Gasoline—Electric—Hot Air—Pneumatic or Gravity.

FIG. 62AG

REECO Gasoline Surface Pumper

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Williams' "Falcon" Drop-Forged Waste Plug Spanner

The old adage tells us "Necessity is the mother of Invention," but makes no mention of the father; presumably he is "mere man." At any rate, we are rather proud to have "fathered" the invention of the useful and badly needed tool here illustrated.

It is far more efficient than any possible makeshift and the folding handle allows it to be readily carried in the pocket. The dimensions of the "finger ends" make it universally adaptable to all sizes and forms of basin and sink plugs and grates. The tool is hardened for severe service. Descriptive booklet free.

J. H. Williams & Co.

"The Drop-Forging People"

17 Richards St., Brooklyn, N. Y.

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Here's The Farnsworth Double-Action Feeder!

The Farnsworth Duplex Boiler Feeder is the only machine of its kind on the market for returning condensation to boilers under pressure at a high temperature. It feeds **continuously**, one chamber feeding while the other chamber is receiving.

There are 12 styles and 25 systems—one to handle the condensation problem at your plant.

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This shows the machine which is saving steam plants from 1 to 10 tons of coal per day.

"The greatest coal saver ever offered the steam plant."

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Engineers and Manufacturers of Condensation Pumps

The Boston Round Grease Trap

is an ideal trap for use under kitchen sinks and in small restaurants.

The BOSTON Trap prevents clogged pipes by separating the grease from waste water and retaining it. Removing grease from Trap is a simple matter. The extra large handhole is a distinctive feature of the BOSTON Trap.

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Made in two sizes—120 and 210 gallons per hour.

Efficient deep well pumps—125 to 2,000 gallons per hour.

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HEAVY COVERING ASSURES LIFE-LONG SERVICE — ACID-PROOF — IMPERVIOUS — STANDS ABUSE LIKE A BOWLING BALL — CONCEALED HINGES — INDISPUTABLE QUALITY

RECOMMEND THIS PROFIT MAKER

ASK YOUR JOBBER OR SEAT DEPT.

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Massachusetts

Haverhill and Vicinity.

Early replies received by Secretary C. M. Neily, of the Haverhill Master Plumbers' Association, indicated a large attendance at the annual outing of the association held this week at the home of "Hap" Ward, at Lynnfield. The committee in charge consisted of Mr. Neily, W. B. McAree and O. F. Bennett.

Printed copies of new plumbing ordinances recently adopted by the City of Haverhill are being distributed by city officials. It is the intention of the plumbing inspector to see that the ordinances are lived up to in every particular.

Contracts for a new ward building for the Worcester City Hospital have been placed. The plumbing was given to J. T. Cahill & Co., for $3,095, and the heating to Edwin Hawes & Co., for $7,075.

Edward Courtemanche has purchased the business of the Amesbury Heating & Plumbing Company at Amesbury.

The state civil service commission has certified the following as eligible for appointment as plumbing inspectors for the city of Lowell: John E. Moynahan, William L. Ryan and Charles M. Midwood. Nine persons passed the examination and Mr. Moynahan and Mr. Ryan were placed at the head of the list because they are veterans of the recent war. Others who passed the examination and will become eligible as vacancies occur are: John H. McGuinness, James A. Howard, William F. Quirk, James J. Quirk, George Roche and Eugene A. Shea, all of Lowell.

The contract has been let for the erection of a public comfort station in Crompton Park, Worcester, and the park commission plans to place another in Green Hill Park. The city has been asked for $15,000 for the stations.

The New Bedford Textile Council, composed of representatives of most of the mill operatives' unions in that city, has adopted resolutions asking the city officials to establish comfort stations in the center of the city and at the west, north and south ends.

A new building is being erected on Frederick Street, Worcester, to be occupied by Klebert & Rowley, dealers in plumbing and heating supplies.

Hobart & Farrell, of Brockton, have been awarded the heating contract and the C. A. Bray, of Boston, the plumbing, for a graded school building to be erected at East Walpole.

Rhode Island

Providence and Vicinity.

David H. Hindle, 197 Cranston Street, has secured the contracts for the installation of plumbing and heating systems in a country home for E. Patter, at North Kingston and in twelve new residences in Providence.

Providence Plumbing Co., 151 Orms Street, has been awarded the plumbing and heating contracts for Lecht Bros.' Slaughter House and in three residences on Weselyen Avenue.

A. B. Matteson, 80 Richmond Street, will install modern plumbing in two new residences and in a large business building in Providence.

Louis Delerson, 522 North Main Street, has secured the

contract to install plumbing equipment in three residences on North Main Street.

The John F. Cox Co., 74 Richmond Street has been awarded the contracts to install heating systems in the Vesta Knitting Mills and in St. Vincent's Orphan Asylum in Fall River, Mass.

Allenson & Reynolds, 84 Broad Street, have the contract for plumbing and heating work on two residences at Main and Broad Street.

Cuddy Bros., 282 Thurbers Avenue, will install plumbing and heating equipment in the Texas Oil Co.'s plant and in Hickey's Garage.

Williams & Galvey have plumbing and heating contracts for three residences and a business building in East Providence.

J. E. Fitzpatrick, 111 Elmwood Avenue, will install modern plumbing in residences for S. Curren, F. B. Grover, A. J. Schmidt and Dr. Perry.

Other Cities in the State.

Wm. H. Griffith & Co., Narragansett Pier, were awarded contracts for the installation of plumbing systems in residences for John R. Fell, N. R. Greene and in the Revere Hotel.

Theodore D. Coleman, Narragansett Pier, will install plumbing and heating equipment in the Frank E. Richmond residence, the Washington County Jail, at Kingston and in the new Narragansett Pier School.

Georgia

Atlanta and Vicinity.

The Capitol Plumbing Co. of Atlanta has secured the contract to install modern plumbing in the Atlanta Mutual Insurance Co.'s office building on Auburn Avenue.

The Flournoy Plumbing Co. of Atlanta is installing the plumbing equipment in several apartment buildings being constructed by the Massell Construction Co.

New York

New York and Vicinity.

The Manhattan Branch of the New York City Association of Master Plumbers has arranged to again hold a Summer Outing. These pleasant yearly events having been suspended during the war, it is proposed to make the 1919 affair doubly interesting and enjoyable.

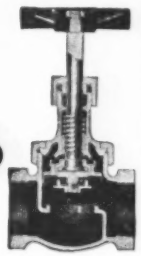
The Steamer Griswold has been retained to carry the cargo of merrymayers to Karatsonyis' Park at Glenwood, L. I., on Thursday, September 11th, where they will make a day of it.

A special baseball game between the Anti-syphons and the Fresh-airs will form a feature of the afternoon's activities. A clam bake will be the piece-de-resistance. Tickets are $7.00 each. The committee in charge is composed of: Harry Hemlin, chairman; O. J. Davis, secretary; M. Jarcho, treasurer; Jere L. Murphy, David Deigan, F. B. Lasette, Richard Tretler, J. P. Blair, I. J. Brown and J. H. Jasper.

H. C. Peterson Co., of 20 Oneida Street, Utica, has the plumbing contract on the new $150,000 Herkimer County, Tuberculosis Hospital at Utica.

MARSH

UNION BONNET DOUBLE SEAT VALVES



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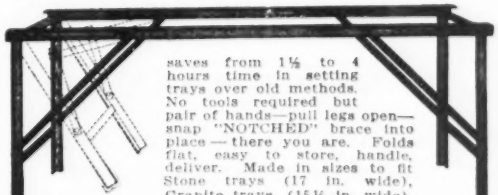

saves from 1½ to 4 hours time in setting trays over old methods. No tools required but pair of hands—pull legs open—snap "NOTCHED" brace into place—there you are. Folds flat, easy to store, handle, deliver. Made in sizes to fit Stone trays (17 in. wide), Granite trays (15½ in. wide), 10 different lengths—regular 2 and 3 part—8 special lengths. Send for catalog and tell your jobber size wanted.

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The Excelso Water Heater

in connection with any steam or vapor boiler. No coils to interfere with fire.

Simplest and most efficient water heater made.

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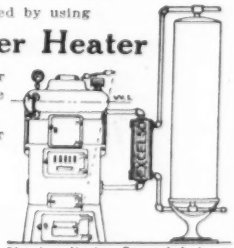

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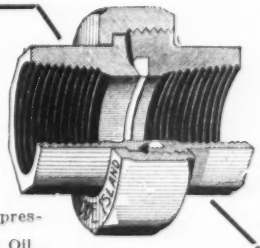
Rhode Island Union



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Bronze Seat
No Packing
No Gasket

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For Steam, Water, Gas and Oil.

The best is cheapest in the end—use the

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Wolverine Heavy Brass Flanges
WITH SPRING HOLDERS

The Flange That Stays In Place

20 Graduated Sizes of Hole 1/8" to 2"

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Adapted for all Types of Buildings

Over 25 Years' Experience

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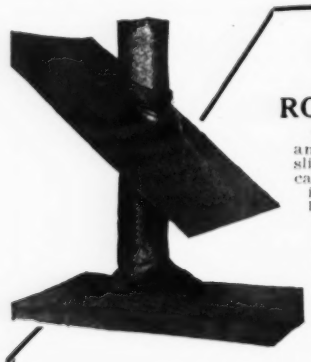

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ROOF FLASHER

Makes a water-tight joint and a perfect fit. When slipped over soil pipe, can be calked as absolutely tight as if poured in place. Flasher has patented cast iron caulking base.

Furnished in all sizes from 1¼ to 6-in. for angle and flat roofs.

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CLEVELAND, OHIO

NIEDECKEN MIXER

For Shower Lavatory Bath Sink Etc.

Write for Bulletin D-10-X

HOFFMANN & BILLINGS MFG. CO.
MILWAUKEE

W. G. Wild of New York City will install the plumbing work in August Heckscher's new $100,000 museum building in course of construction at Huntington, L. I.

OIL SEPARATORS AND THEIR CONNECTION WITH HEATING SYSTEMS.

(Continued from Page 208.)

will usually take care of a considerable increase in condensation above the normal without extra provisions. As live steam is admitted to the trap at each discharge it tends to keep the interior surfaces and passage free from accumulations of grease and oil.

Oil filters are a form of separator of large size in which the baffles are replaced by a layer of absorbing material such as hay, excelsior, coke, etc. A filter of this type making use of coke is shown in Fig. 7. The casing is of boiler iron and the coke is held in place by wire screens as indicated. The inclined position increases the filtering area and also assists in renewing the coke, which may be removed from the lower door and the fresh charge put in at the top. After the coke becomes impregnated with oil

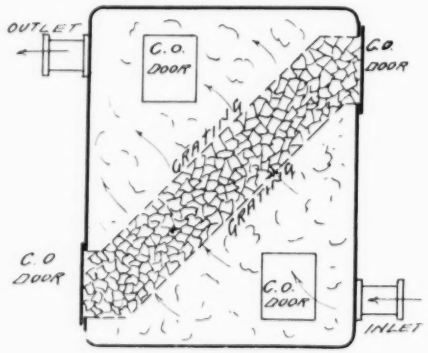

Fig. 7.

it may be burned under the boilers and fresh material used in the filter. Devices of this kind give good results when the filter is frequently renewed, but they require considerable space and attention, so are not so commonly used as the mechanical separator. In washing, the steam is blown into an enclosed tank partially filled with water, through a number of tubes extending some distance below the surface. As it bubbles up through the water the oil is separated from the steam and collects on the surface, from which it is removed by flotation or skimming. The purified steam, after leaving the water, is discharged from the separating chamber near the top. Patented devices of this kind are upon the market and this arrangement is not usually employed when it must be constructed on the premises.

NOTES ON THE HEATING OF PUBLIC AND PRIVATE GARAGES.

(Continued from Page 203.)

efficiency of the heating apparatus in the house and the increase in coal consumption quickly shows the method to be a poor one.

In a properly ventilated building (and all garages, large and small, should be well ventilated), a small hot water heater and system can be installed that will prove safe and satisfactory in every particular, and such a system can be arranged to supply hot water for use at a sink or lavatory, or for tempering the water used for washing the car.

WHAT YOU SHOULD KNOW ABOUT OVERHEAD EXPENSE.

(Continued from Page 205.)

Let's take an example. Say the raw cost (by which I mean labor and material) is $8,500. Say your cost of doing business is 10 per cent. Say you want to make 5 per cent on the job. Your estimate should be $10,000. We arrive at this figure by adding your 10 per cent and your 5 per cent together, making 15 per cent. This 15 per cent is subtracted from 100 per cent. Why? Because 100 per cent is what the estimate will contain. Fifteen from 100 is 85. Now divide your raw cost by 85, the result obtained is $10,000, which is your proper figure. You have then allowed 10 per cent for overhead, which is $1,000, and 5 per cent for profit, which is $500, and the job figures up this way:

Cost	$8,500
Overhead	1,000
Profit	500
Total	$10,000

I have made the figures easy to understand by selecting numericals that would come out even. The same percentages will work out, even to odd cents, on all estimates.

Now instead of figuring the way I have done let's figure the way I know some master plumbers do figure. Say the raw cost is $8,500, and say that overhead is 10 per cent. The plumber wants to make a profit. He adds 10 per cent of $8,500, which is $850 and arrives at $9,350. He shoots this in as his estimate and gets the job. His overhead is 10 per cent, which is $935, and when we subtract his overhead from $9,350, which was all he got, we arrive at $8,415, which is less than his raw cost on the job, and he installs the plumbing at an actual loss of $85.

The only thing I shall say in conclusion is that the prominent man in any community, the respected man, the man whose advice is sought and whose judgment is looked up to is the successful man, the man who has made money out of his business, who has figured his overhead and his profit into every job that he has done, who has thought so much of his own ability that he has demanded pay for his services in full, who has laughed in the faces of the men who wanted him to work for nothing, and who at the end of his career has laid aside sufficient money to support him in his old age. The man with last year's hat, the shiny coat and the frayed breeches may have the nobler heart and the better character, but his business judgment is not respected.

WHAT IS A RE-SEALING TRAP IN PLUMBING?

(Continued from Page 213.)

siphon trap is re-sealing. Things that are equal to the same thing are equal to one another.

The matter of resealing is not exclusively a matter of manufacture. It is also a matter of existing physical conditions under which the traps have to operate.

A trap that will satisfactorily re-seal itself in one place may fail to do so in another place. The Atlantic City convention tests proved that conclusively.

The common anti-siphon trap may re-seal under low vacuum working conditions, while under high vacuum working conditions it may lose its seal entirely.

Nowadays there is nothing brewing but trouble.—*Philadelphia Evening Ledger.*

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Fig. 160—Steel Concrete Anchor

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KEWANEE, ILLINOIS

TRADE A.S.M.Co MARK
Nickel Plated Brass Specialties
Manufactured by
American Sanitary Mfg. Co.
Abingdon, Ill.

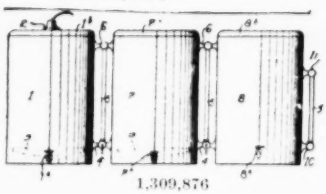
Patents

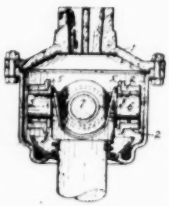
Plumbing Department.

1,309,876. Water Purifying Apparatus. Joseph W. Brenkert, San Diego, Cal. In an apparatus of the class described, the combination of an electropurifying vessel, a dish shaped partition loosely mounted in the bottom thereof provided with a hole in the center, a drain faucet secured in the wall of said electropurifying vessel and communicating with the interior thereof below the outer edge of said partition, whereby the sediment from said vessel may be readily removed, another vessel adjacent thereto, conducting means between said vessels provided with means for making them non-communicating and with a gage in connection therewith.

1,309,715. Ratchet Tool. Edward H. Barton, Sprague, Wash. In a tool of the character described, a shank having a bifurcated end, a bit mounted in the bifurcated end for swinging movement to permit, reversal thereof, a freely rotatable sleeve slidable on the shank for movement over the bifurcated end to hold the bit in its reversed position,

1,309,715


1,309,876


1,309,826

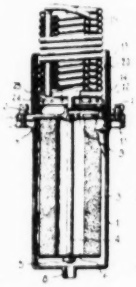
a pivot screw for detachably holding the bit in said bifurcated end and forming a stop for the sleeve, and a spring for normally holding the sleeve in extended position against the stop.

1,309,826. Universal Joint. Bertis H. Urschel, Bowling Green, Ohio. In a universal joint, a member having a hole adapted for the reception of a bushing, in said opening a bushing having a flange, the edge of which has two parallel straight portions, said member being recessed for engagement with said straight edge portions of the flanges, whereby the bushing is prevented from turning.

1,309,892. Water Heater and Filter. Charles Joerin, Jr., and Albert E. Joerin, Detroit, Mich. A water filter and heater comprising an upright casing with heating coils therein, a water filter cylinder disposed below and in axial alignment with the coils and provided with an enveloping casing, a cap comprising a division wall between the filter and coils and containing water outlet connections from the filter to the coils, a gas burner extending into the coil casing on the cap, and a water outlet connection from the filter and a hot water outlet from the coils together with a hot water faucet controlling the outlet from the coils and interconnected with a gas cock from the burner, to open simultaneously therewith, and a cold water faucet from the cold water inlet, the cap forming an insulating element between the filter chamber and cylinder and the chamber formed by the coil casing.

1,309,965. Container for Soap. William C. Schwab, Canton, Ohio. In a soap dish, the bottom portion and an apron depending from said bottom portion, grooves formed

in said bottom portion of said apron, raised portions intermediate said grooves in said bottom portion, said raised portions being designed to hold a cake of soap away from contact with said bottom portion, means for attaching said soap dish to a sink, tub or the like, the said depending apron within the said sink or tub, the said grooves being designed to convey water from the cake of soap to the sink or tub.



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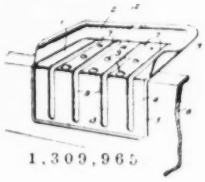

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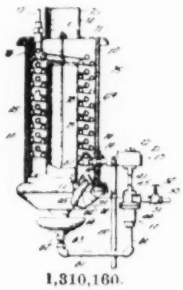
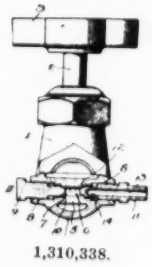


1,310,160.

1,310,160. Automatic Water Heater. Ezra S. Hoyt, Los Angeles, Cal. An automatic heater comprising a water control valve provided with a valve casing constructed with a cylinder, having a water inlet chamber, a passage between the water inlet chamber and the upper part of the cylinder, an arm on the cylinder having an opening, an opening in the lower part of the cylinder, connecting with the opening in the arm and an opening between the water inlet chamber and the opening in the arm extending substantially at right angles thereto, a piston in the cylinder dividing it into an upper pressure chamber and a lower pressure chamber, a valve stem extending across the opening in the arm and formed with a tapering valve adapted to partly close the opening from the water inlet chamber, a gas valve casing constructed with a gas chamber, and an opening from the gas chamber, a valve for said opening, means whereby the water control valve casing is connected with the gas valve casing, a piston rod extending from the piston and connected to the gas valve, and a spring for seating the valve against the opening from the gas chamber.

1,310,338. Compression Stop and Waste Cock. Otto G. Hitchcock, Erie, Pa., assignor to Hays Manufacturing Co., Erie, Pa., a Corporation of Pennsylvania. In a compression stop and waste cock, a casing formed with a transverse passage leading through the partition wall thereof, said passage comprising a smaller central bore communicating with



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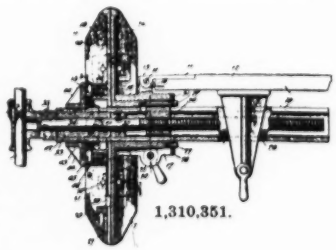

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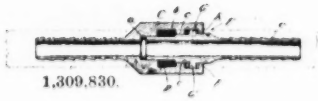

1,309,830.

the discharge side of said partition, and enlarged portions on each side of said bore internally screw-threaded, said smaller central portion at its ends forming valve seats, a screw plug adapted to be inserted in either said screw-threaded

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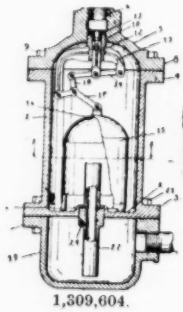
portions so as to seat against and close its valve seat, and a waste tube also adapted to be inserted in either screw-threaded portion, said tube being closed at its inner end to close the valve seat of its threaded portion and being apertured in one side to provide communication between its interior and said transverse passage when its inner end is withdrawn from its valve seat.

1,310,351. Vise Victor R. Koontz, Waynesboro, Pa. In a vise of the character set forth, the combinations with jaw members relatively movable toward and from each other, of a beam between the members that permits their said relative movement, said members having sets of coacting jaws on opposite sides of the beam, and a transverse pivotal connection between one member and the beam having its axis intersecting the main body of said beam and permitting the jaws of one set to relatively swing toward each other and of the other set to simultaneously swing away from each other.

1,309,830. Flexible Pipe Coupling. Ernest Wanamaker, Chicago, Ill. A coupling of the kind specified comprising a tubular female member having a head the diameter of the bore of which is greater than that of the stub extending therefrom, and the diameter of the bore of said head being stepped to a still greater diameter for a portion of its length extending back from and including the mouth of the same; said greater bore being provided with an inwardly projecting annular flange whose inner circumference exceeds that of the rear end of the bore of the head, which latter, at the mouth thereof, is provided with spaced apart inwardly projecting studs the distance between the ends of which is greater than that of the diameter of the inner circumference of said annular flange, and a compressible packing ring the diameter of whose inner circumference corresponds to that of the rear end of the bore of the head and seated in and filling the annular space between the said annular flange and said rear end, in combination with a tubular male member the diameter of the advanced end portion of which corresponds to the diameter of the inner end of the bore of the head of the female member and which, at a point a distance back from its extremity exceeding the width of said packing ring, is stepped to a greater diameter not exceeding the inner circumference of the inwardly projecting annular flange of said female member, and, at a point back from said step a distance exceeding the width of said inwardly projecting flange is provided with an outwardly projecting annular flange having recesses in its circumference through which the studs of said female member are adapted to pass.

Heating Department.

1,309,604. Steam Trap. Adam E. Armstrong, Three Rivers, Mich. In a trap, the combination of a float chamber having a discharge valve, a separating chamber below said float



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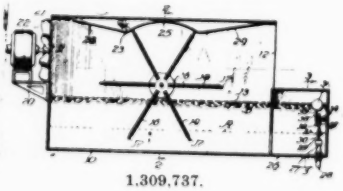


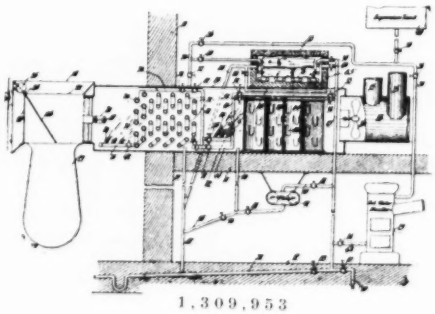
1,309,737.

chamber, a centrally disposed tube depending into said separating chamber and extending upwardly into said float chamber, said tube having a port at the top of the separating chamber, a submerged float open at its lower end arranged

in said float chamber so that said tube discharges thereto, and operating connections for said float to said valve.

1,309,737. Air Washer and Humidifier. Robert A. Ilg, Chicago, Ill. In an air washer and humidifier, the combination of a tank to contain a liquid, said tank being open at the upper portion of both end walls thereof, a paddle wheel having radial screen paddle blades rotatably mounted in and transversely of the tank and dipping into the liquid contained in the latter, an air-forcing device positioned opposite one open end of said tank, and an air guide slidably engaged continuously by the outer transverse edge of one or more of the blades as the paddle wheel rotates, whereby to cause all of the air delivered by said air forcing device to pass through said blades and turn said paddle wheel.

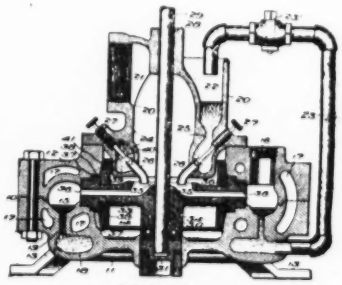
1,309,953. Combined Cooling, Ventilating, Heating, Humidifying and Purifying Apparatus. Bernard MacFadden, New York, N. Y. In combination, a continuous elongated box open



1,309,953

at both ends; coils connected in series in said box; absorbent material around the coils at the inlet end of said series; means for passing water through the covered coils at the inlet end of the box and thence through the remaining coils; means for spraying water on the absorbent material; a conduit connecting the outlet of said box with the room to be cooled; and means for causing a current of air to pass through said box to the room to be cooled.

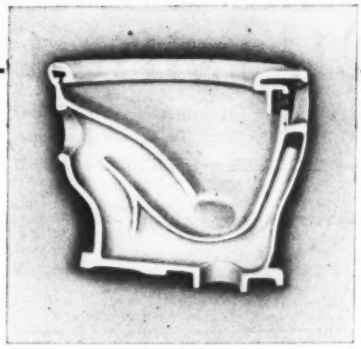
1,310,116. Centrifugal Pump for Compression and Vacuum. Edward C. D'Yarmett, Muskogee, Okla. In combination, a casing having a main chamber and a compression chamber, a rotary member within the main chamber having passages which discharge into the compression chamber, means for admitting a stream of active liquid to the passages and re-



1,310,116.

movable sealings rings attached to the rotary member and frictionally engaging the walls of the main chamber for preventing communication from the compression chamber to the main chamber.

When we finally bury the hatchet with the Germans it will be just as well to note carefully where it is buried.—*New York World.*



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WANTED — COMPETENT AND WELL experienced man to take charge of plumbing and mill supply house. House just opening up. Location western part of Virginia. Prefer man who knows the trade in Virginia, West Virginia, Tennessee and North Carolina. Good pay and opportunity for man who can deliver the goods. Apply 2693, care "Domestic Engineering," Chicago. 8-2

WANTED—SALESMAN WITH THE ability to sell plumbing and heating goods to Iowa trade. Acquaintance with trade will be to your advantage, although house is well known. An energetic up-to-the-minute salesman is wanted. Your selling ability will govern wage increases. Co-operation always given. Address 2691, care "Domestic Engineering," Chicago. 7-26; 8-2-9

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FOR SALE—WE ARE OVERSTOCKED with hot water N. P. radiator valves and union ells ¾ and 1-inch. All brand new which we will sell cheap. For further particulars write Edward Towe, 32-34 Oak Street, Rochester, N. Y. 8-2

FOR SALE—KEWANEE PRIVATE water system 4x24 ft. tank, 2-H.P. D. C. motor and pump. Used six months and in fine condition. Address President School Board, Oglesby, Ill. 7-26

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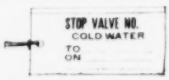
Miscellaneous.



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EVERLASTING ADVERTISEMENT FOR THE PLUMBER

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WE WANT TO BUY—A FACTORY AND business of a good line of plumbers' brass goods. If you have this kind of a factory, we can make quick, clean work of buying you out for SPOT CASH. Therefore, state clearly in your first letter full particulars, together with price for quick results. Address 2674, care "Domestic Engineering," Chicago. 6-28

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TIME SHEETS, JOB TICKETS, ESTImating blanks, illustrated stationery, blotters, etc. for plumbers. Reasonable. Send 5-cent stamp for postage on samples. Prompt service. P. Fink & Sons, 56 N. 7th St., Philadelphia, Pa. 8-2tf

WE BUY AND SELL USED PLUMBing and heating material. D. B. Plumbing & Heating Sales Co., Ft. Wayne, Ind. 2-1 tf

Government Proposals

TREASURY DEPARTMENT, SUPERvising architect's office, Washington, D. C., July 23, 1919. Sealed proposals will be opened in this office at 3 p. m. August 21, 1919, for a toilet room in the United States Custom House, at Detroit, Mich. in accordance with the specification and drawing, copies of which may be had at this office or at the office of the Custodian, Detroit, Mich. in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect. 8-2; 9

SAACO

Did you read our half page advertisement on Ideal Insertable Joint in the July 26 issue of "Domestic Engineering?"
SANITARY CO. OF AMERICA
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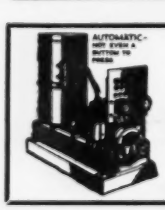

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